THE VETERINARY JOURNAL

AND

Annals of Comparative Pathology.

SEPTEMBER, 1875.

VETERINARY PRACTICE IN INDIA.

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(*Continued from page* 106.)

AFTER the operation it is better to tie the horse up by the head for a few hours, or what is preferable, let his "horse-keeper" stand by him. In India, the horse-keeper's sole charge is his horse, so that there is seldom any complaint at this time of want of attention. These men will sit patiently for hours with the hand constantly in motion, warding off the flies from the wounds. The best application to the wounds is the common sweet oil of the country, to which a few drops of oil of turpentine have been added. The flies in all veterinary hospitals in India are the veterinary surgeon's special annoyance (to be referred to at some future time), particularly during the "rains," and it is only by means of pungent dressings they can be kept at bay.

After a few hours, or less, all indications of pain will have ceased, and, as before stated, the horse rarely refuses his food at any stage of the operation.

The time during which the clams should be left on will depend on the size of the cords in each case, but as a general rule thirty-six hours are sufficient. The operation is usually

performed in the early morning, the heat during the day being too great for outdoor work; if the clams are removed during the evening of the following day, it will be most convenient.

The testicles will now be found discoloured, shrivelled up, and in most cases dry and hard, with the straw-coloured serum trickling over them from above. A "twitch" should be put on, and a fore-foot held up. The operator seizes the tail with his left hand, and with a sharp pair of scissors in his right he cuts away the dead testicles from behind, close up to the clam. Occasionally it is more convenient to do this from the front, if the testicles are much drawn up.

Before taking off the clams, it is a good plan to introduce the finger on each side of the cord, so as to break down any adhesions which may have formed; for in the majority of cases adhesion takes place by the first intention, when, if they are not broken down, the end of the cord will not be retracted, and will probably lead to the affection called "champignon," *i.e.*, a mushroom kind of growth at the extremity of the cord. This freeing of the cord from adhesions can be done better before than after the clams are removed. On passing up the finger, a quantity of imprisoned serum will probably escape; this is an indication that the orifice is sufficiently open. A sharp penknife or scalpel is now taken, and with the thumb pressing on the end of the clams, the ligature which holds them posteriorly is cut through; the ends are then opened out and pushed forward, when they drop off. This is always most conveniently done from behind.

In most cases, if the adhesions have been freed as described, the end of the cord is at once retracted; but this is immaterial, so long as the operator is satisfied that the orifices are sufficiently open. The wounds are then wiped clean, the "anti-fly" dressing applied, and the horse bedded down.

Very rarely a case will be met with in which there is slight hæmorrhage on removing the clams, and blood will drop for half-an-hour or so. This arises from the constriction not having been sufficiently great; from the cord being unusually large; from the clam being too short; or the wood too light, so that it yields; or the ligatures not having been made sufficiently tight. Any one of these causes may produce it, but the writer never

found this secondary hæmorrhage of the slightest consequence; and a plug of dry tow will speedily arrest it.

The latter portion of the operation with caustic clam can be carried out by an assistant, such as the farrier major or farrier serjeant. The writer never found it necessary to cast the horse, even the most vicious, for the purpose.

On the following morning the animal should be taken out for half-an-hour's exercise, repeating the same every morning and evening. The wounds should be kept clean by fomenting them morning and evening with warm water, applying afterwards the fly dressing.

There is at times a good deal of swelling, but if the wounds are kept well open, and they suppurate freely, the case is doing well. The dresser should be directed to pass his finger through the orifices daily, so as to prevent premature adhesions; otherwise abscesses are apt to form in the neighbourhood, and prolong very materially the recovery. On the expiration of ten days, all danger is past.

There is one point in the treatment to which the writer would draw particular attention, and which he thinks has not been sufficiently noticed. In India there is no such thing as turning a horse out to grass (the practice usually adopted after the operation in England), so that the whole process must be carried out in confinement; but care should be taken not to place the patient in a closed box or walled-in stable; it is better to picket him in the open air, or, better still, under an open shed, so as to ensure a free supply of fresh air, with protection from the sun. Every case of Tetanus from castration, which came under his observation, was in horses that were placed in loose boxes or closed-in stables, after the operation.

There is no doubt that in the majority of instances the horse would be fit to work or to march, if required, ten days after the operation has been performed, provided the wounds are properly attended to, kept clean, and the animal well fed. With regard to this latter point, grain may be given as soon as suppuration is established; for there is a great drain on the system, and if not generously fed, the horse will fall off considerably in condition.

According to the writer's experience, the shortest period that any horse was under treatment was one operated upon by "scraping." From the first incision to the wounds being perfectly healed, only nineteen days elapsed, in a fully developed six-year-old horse. The shortest period with the clams was twenty-four days; and the longest three months, from adhesions having formed. The average period was one month.

Next of the operation by *scraping*. This also is a very simple and expeditious mode of operating. It occasionally happens in the army that it is found necessary to castrate a large number of animals expeditiously—horses, ponies, or mules,—so as to render them more tractable when in service; several hundreds may have to be "cut" in a fortnight or so, and there may be only one veterinary surgeon available for the duty. Under these circumstances, "scraping" is the readiest method at hand; for by this means a smart operator can get through thirty to forty in a few hours, and there is no after trouble in the way of removing clams.

To perform this operation, the horse is cast on to his *near* or *left* side with the hopples. The testicle is seized with the left hand, and by a free stroke of the scalpel through the scrotum, it escapes. The finger is now passed through the cord, dividing the blood-vessels, anteriorly, from the spermatic vessels and cremaster muscle, posteriorly. The latter is cut through with the scalpel, when the spermatic artery and vessels, with the attached testicle, remain quite in the power of the operator. Taking a large rough-edged knife, he passes it rapidly up and down the cord: the vessels speedily become frayed through, and the testicle detached. The other testicle is served in the same way, a sponge of cold water squeezed over the wounds, and the horse allowed to rise, the whole process occupying about three minutes.

Some practitioners prefer to cut away all except the spermatic artery; this is taken up, and with an ordinary small *post-mortem* saw its coats are frayed through transversely, instead of longitudinally as is done in the ordinary method of scraping; the object in both, of course, being the same, *viz.*, so to fray the artery into shreds that its coats will curl up and contract irregularly, and thus arrest hæmorrhage.

The great objection to the operation by scraping is that there is often a good deal of hæmorrhage,—the wounds will at times bleed for hours. This may possibly do no great harm, as the writer never heard of one bleeding to death, except in cases where the artery was cut clean through at one stroke, by uninstructed men.

The mortality is low; but, from the writer's experience, not so low as when the caustic clams are employed, and they generally make good recoveries. As before stated, it has its advantages under certain circumstances, when people are not particular about appearances.

Complications in Castration.

Next, of the complications met with during, and following, the operation. The most common complication met with during the operation is adhesion between the testicle and scrotum. This is of frequent occurrence with aged horses; probably about one in three will be found so affected. The adhesion is invariably at the lower part of the testicle, where the incision is made; the operator will generally cut into the body of the testicle before he is aware that an adhesion is present. In a slight case the band can be broken down with the finger or the handle of the scalpel, or an incision may be made at the side of the testicle, and carried round, leaving the adhesion as it is.

In other cases the whole testicle will be discovered to be adherent, and the operator will find it impossible to dissect it away. There is no sac, no fluid, and the inner coat of the scrotum has become incorporated with the testicle. It now becomes necessary to perform the *covered* operation. Partly with the finger, partly with the scalpel, the connective tissue uniting the tunica vaginalis reflexa to the dartos is broken through; this will require a little effort, but it must be stripped clean down to the cord, and any loose shreds of connective tissue can be snipped off with scissors. When the cord is reached, and all is well cleared, an unusually long and strong pair of clams must be put on, and tightly secured. It would not be easy to operate in these cases other than by means of the clams.

If the adhesions are at all extensive or troublesome, the writer

recommends that this, the *covered* operation, be performed without hesitation, for the whole mass of disease is at once got rid of. For should the operator be successful in dissecting it off, he has remaining the thickened and diseased tunica vaginalis reflexa, which will considerably prolong the subsequent healing process.

It will be found that, if the clam is strong and securely tied, the case will do just as well as if the uncovered operation had been performed; nay, more, the writer has found that they heal quicker and more favourably. In these cases it is desirable to leave on the clam for forty-eight hours.

It is difficult to account satisfactorily for these adhesions. They are no doubt the result of inflammation. It has been suggested that they are indicative of an Inguinal or Scrotal Hernia; the writer cannot verify this, and he thinks they are too often met with for this to be the case; moreover, in those troublesome cases, "descent of the intestines after castration," no adhesions are present, according to his experience. It is probable that the majority, if not all, arise from external injury. The Persian dealers are at times very rough with their horses, and they will use a whip or stick freely to a horse unusually troublesome.

The writer is not aware that there are any means of detecting a slight Inguinal Hernia—chronic and not strangulated, if such a thing exists; but a Scrotal Hernia is generally plain enough, from the distention of the scrotum; though it can only be decided for certain by a manual examination. In India it is very common to find the scrotum enlarged and permanently distended from an accumulation of serum ("Hydrocele"), and in many instances the scrotum will be found thickened and enlarged from Œdema, under the same circumstances in which we find swelled legs, often for want of exercise.

A Scrotal Hernia can be diagnosed by the facility with which it may be reduced: that is, by manipulation it can readily be returned into the abdomen; in this respect it offers a marked contrast to a distention of the scrotum from Hydrocele or Œdema. The writer has frequently operated where the scrotum was thickened and distended, and when a novice might reason-

ably suspect a Hernia to exist; but if by manipulation the distention could not be reduced, he was never deceived by the unexpected appearance of the "gut" on opening the sac.

In operating when a Hernia is present, there need be no hesitation, no matter how large it may be. Cases are met with where the distention is as large as a football. When the horse is on his back, the knuckle of intestine is pressed up out of the way, and the covered operation performed, leaving the clam on for three or four days, when firm adhesions will have taken place. These cases generally do well.

Horses will work for years with a Scrotal Hernia, and it is only when it assumes a great size that inconvenience is experienced. It is obvious that the internal ring must be of considerable width to admit of a free circulation; from this circumstance the writer is inclined to the opinion, although he never had the opportunity of verifying it by a *post-mortem* examination, that the "gut" remains permanently in the inguinal canal after the operation, or for a considerable time, at all events.

Should the scrotum be opened inadvertently under any circumstances, and the intestine appear, the course to be followed is obvious, *viz.*, to reduce the Hernia, and perform the *covered* operation.

(*To be continued.*)

FOLLICULAR SCABIES IN DOGS.

BY W. HUNTING, M.R.C.V.S., LONDON.

IN veterinary practice, the diseases of dogs do not meet with the same scientific and systematic treatment as those of the larger animals. In what is called "canine" practice, speculative diagnosis and rule of thumb treatment is the order; consequently, the public are tolerably content if only the diseases of their pets are glibly named and unhesitatingly prescribed for. A specific name for a definite disease is necessary, but the terms we use should carry some real definition, and not embrace two or more affections of a totally different nature. On the other hand, we

should guard against a multiplicity of terms, and not hastily discard those honoured by long usage. With few exceptions, practitioners include all the diseases of the dog's skin under two heads, "Mange" and "Surfeit." Now there are at least six different parasitic affections, exclusive of those due to ticks, lice, and fleas; and probably three others which we may call constitutional: *i.e.*, nine diseases capable of separate diagnosis, depending upon distinct causes, and presenting different symptoms.

One of these diseases depends upon the presence of the *Acarus folliculorum:* a creature which inhabits the hair follicles and sebaceous ducts, and is seldom recognised as distinct from ordinary Mange. It is this disease I propose to describe as "Follicular Mange," a term quite sufficient to indicate a distinct affection, and yet retaining the old word which every one understands. The word "Mange" I would limit to that disease of dogs analogous to the Itch of man and the Scab of sheep. Follicular Mange is described by Fleming in "Veterinary Sanitary Science." It was treated of by Gamgee in his lectures on Pathology. The parasite has been described by Simonds, and is figured in Williams' "Surgery." It has long been recognised by Continental veterinarians, but I know of no author who has both pointed out the gravity of the disease and indicated a cure.*

The *Acarus folliculorum* of the dog, as seen under the microscope, is identical with the parasite found in the human skin; yet, strange to say, in man there is no virulent disease traceable to it; whilst in the dog it is the cause of one of the most intractable and repulsive forms of skin disease. The disease in

* "With regard to the treatment of Follicular Scabies, the situation of the *Demodex* renders it almost inaccessible to parasiticidal remedies; the disease it engenders is therefore looked upon as extremely troublesome, and in the majority of cases almost beyond a cure. Often when it is believed to be extinguished, it re-appears in all its virulency in one or two months. Nevertheless, Zürn asserts that he has frequently succeeded with an ointment composed of one part of benzine to four of lard. Weiss recommends the inunction of essence of juniper. Zundel states that the balsam of Peru has often yielded good results when the malady has not been of too long duration; he has employed it dissolved in alcohol (one to thirty); he has likewise used the green ointment of mercury with success, as well as the nitrate of silver ointment. Hofer speaks highly of an ointment composed of carbolic acid, and Vogel prescribes a solution of caustic potash."—*Veterinary Sanitary Science and Police*, vol. ii., p. 458.

the dog was first described by Gruby, who induced it by inoculation with the parasite from man. This case showed all the symptoms found in the ordinary cases, and is strong evidence of the identity of the human and canine parasites.

The *symptoms* of the disease are seldom seen in the first stages; they consist merely of circumscribed spots from which the hair falls, and upon which are noticeable a few small pimples. These patches extend rapidly, and fresh ones appear on other parts. Any portion of the skin may be affected, but the head, legs, belly, and sides are usually the seat of the disease. The affected places are almost hairless, and what hair remains is easily pulled out; small pimples and pustules stud the surface, the latter varying in size from a pin's head to that of a pea. The confluence of the pustules, and the discharge of their contents, give rise to scabs; these crack and bleed, and so produce a most repulsive appearance. In white-haired dogs, the skin is red; in all it is extremely hot, and emits an unpleasant odour. The irritation does not excite much scratching, but the dog frequently shakes himself. More pain than itching seems to accompany the disease. In cases where the whole body is affected, loss of condition is most marked; and in cold weather the almost total loss of hair may cause death, if the animal be not kept in a warm place. This stage, too, is always accompanied by a ravenous appetite, due, probably, to the rapid loss of animal heat.

Diagnosis. In white dogs the colour of the skin may cause the disease to be mistaken for "Red Mange," or "Eczema." The circumscribed spots in the first stages may be confounded with some forms of Tinea; and the loss of hair and presence of scabs seen in the fully developed disease may easily be mistaken for ordinary Scabies. The pustules, the heat of the skin, and the comparatively slight itchiness shown, are, however, nearly diagnostic. Positive diagnosis can only be made by the aid of the microscope and the detection of the parasite. If we puncture one of the pustules, and mix its contents on a slide with a little water, the acari are easily discovered. I have found as many as thirty in one pustule. Sometimes we may detect them on the root of a hair removed from an affected spot. With a low power, the parasites somewhat resemble sprats or minnows, but a higher

power shows them to consist of a head and body, which latter terminates in a long and obtusely pointed tail. They are furnished with six or eight legs situated on the anterior part of the body, three or four on each side. The head consists of two

FIG. 28.

FIG. 29.

The *Acarus folliculorum:* mature specimens. *a*, mouth; *b*, papillæ on each side; *c*, feet.

antennæ and a median proboscis, all of which are capable of being moved forwards and backwards. The legs consist of three segments. The movements of the creatures are not often seen, and are very slow. The parasite measures about one-hundredth of an inch in length, by one five-hundredth in breadth.

The disease is contagious, but not to such an extent as Scabies. My own dog had been in daily contact with an affected one for a fortnight, and showed no sign of the malady. Inoculation of one or two dogs has been unsuccessful, but that it is contagious is beyond doubt. I know a kennel in which this disease appeared about three months after an infected dog had been allowed to live with the others for a week or two. The kennel contained about half-a-dozen dogs, which were often changed; and cases of the disease broke out in this place, one after another, for months.

The duration of the disease is very long. I have seen a case of two years' standing; but I do not think this length of time

could be much exceeded, as the pitiable condition of the animal indicated a fatal termination, unless treatment had been adopted. I am inclined to think that the development of the disease, or I might say its period of incubation, is very slow. At any rate, a healthy dog remains a long time in contact with diseased ones before he shows symptoms of it.

Treatment. My first two or three cases were all unsuccessful, and it was not until I compared notes with Mr. Duguid, the Veterinary Surgeon to the Brown Institution, that I found this was the experience of every one else. We then worked together, and tried preparations of mercury, sulphur, iodine, carbolic acid, and other parasiticides, but still with no effect. These substances were applied either in watery solutions, or in oil, or as ointments, and were used of various strengths, so as in some cases to affect the system, or to produce a caustic action on the skin. It then occurred to Mr. Duguid, that as the parasites were situated deeply in the skin, any application to reach them must first soften and break up the cuticular covering. A mixture of creosote and oil, to which was added a strong solution of caustic potass, was tried, and its action was soon most marked. To facilitate matters, we also adopted the plan of washing the dog with warm water and soft soap, previous to applying the dressing. This is most useful in all parasitic skin diseases, but in none so conspicuously as this; as it softens the cuticle, and removes all scabs, etc., allowing the drug every chance of reaching the parasites.

Carbolic acid, used with oil and caustic potass, is not effective, nor is any drug without the alkali. Creosote ointment was tried without effect by Weiss. Caustic solutions failed in Haubner's hands, but the two combined are, as our experience shows, perfectly reliable. The following is the formula:—

R. Creosote . . ℥ iv.
Olive oil . . ℥ vii.
Sol. potassæ . ℥ i.

Mix the creosote and oil, then add the caustic solution. Dress the affected spots about twice a-week, and allow longer intervals as soon as the skin becomes soft and tender. In cases where the whole body is affected, we adopt the plan of shaving the animal as soon as the skin is sufficiently smooth for the action of a

razor; and in all cases it is good policy to shave about an inch of hair off the sound skin all round the diseased spots. This prevents the spread of the parasites. On a case I have now under treatment, and in which most of the skin was affected, I have tried clipping instead of shaving, and with good results. I fancy the absence of hair not only allows the dressing to act better, but injuriously affects the parasite. If this really be the case, may it not account for the difference in the symptoms caused by the parasite on man and on the dog?

My experience as to the renewal of hair is opposed to that of Weiss, who states that it is not regenerated. I find that except upon those spots where small ulcerations have been followed by a cicatrix, the hair is reproduced, and that it grows rapidly, but not until the parasites are totally eradicated. This is remarkable, as one would naturally expect such damage as is sustained by the follicles would have destroyed their function. When we had cured our first case, we certainly did not expect the renewal of hair, and were not a little agreeably disappointed.

A cure requires from three to eight months, and even a longer time than this must be allowed for the growth of the hair.

RUPTURE OF THE GASTROCNEMII MUSCLES.

BY W. VARLEY, M.R.C.V.S., ROYAL ENGINEERS, ALDERSHOT.

ON June 11th of this year, as an officer was driving down a road in Aldershot in a small phaeton, the pony attached to it suddenly started off at a gallop, and then commenced kicking. The near hind leg eventually got fixed in the ironwork of the platform of the fore-carriage, and was with much difficulty released therefrom. On the animal being walked, it was discovered that he dropped on the near side, and could not sustain any weight on the limb, the hock of which descended to within a foot of the ground, while the fetlock was flexed. The injury was diagnosed as a rupture of the gastrocnemii muscles, and the pony, being unable to walk, was carried to his stable in an ambulance. Cardboard splints and starch bandages were

applied to the limb to support it, and everything appeared to be going on favourably until the morning of the 14th, when the animal was found lying with the injured leg under the body. On raising him, it was observed that the hock had descended much nearer the ground, and that the limb was perfectly useless. As the creature was suffering great pain, and altogether the case appeared to be hopeless, it was decided to destroy him.

On an examination of the injured leg after the pony had been killed, it was found that both gastrocnemii muscles were ruptured at the junction of their tendons.

I may mention that the animal was young—only four years old—and that he had never exhibited any vicious tendencies previous to the accident. One physical peculiarity he possessed in being very "cow-hocked," and this conformation may have predisposed him to a rupture of these particular muscles. The cause of the accident, I believe, was the shortness of the shafts; as a consequence, in turning a corner sharply, being too close to the carriage, some portion of the front part must have struck his hind legs, and frightened him.

VETERINARY MEDICINE AND SURGERY ABOUT 1700.

BY HIPPO-CHIRURGUS.

In reviewing Fleming's "Manual of Veterinary Sanitary Science and Police," the *Pall Mall Gazette* remarks: "It is not too much to assert that Veterinary Science, fifty years ago, did not exist." Undoubtedly this is true; but let us be even more retrospective, and see what the signs—not science—of the times were nearly two hundred years ago. At this period there lived one G. M. Gent, who, for more than forty years, had been an owner and breeder of horses, whose management in health, and treatment in disease, he in a manner understood; and, believing that a record of the results of his long practical experience might be profitably studied, he wrote, "The Gentleman's most Accomplish'd Jockey, with the Compleat Horseman and Approved Farrier." Though it bears date 1722, we must accept its

testimony as being fairly representative of the knowledge that had been acquired on the subjects it treats of, some twenty years before the turn of 1700. The work which Gent considered comprehensive and "to the purpose," will now be regarded as little more than a curiosity in veterinary literature; yet it may serve to supply a link in the chain of evidence necessary to enable the pathologist to reconcile the types and characters of diseases, particularly epizoötics, of bygone centuries with the affections that attack the domesticated animals of all countries and climes at the present day. It is needless to remark that the following extracts are not communicated to instruct, but rather, by their absurd nature, to afford a striking contrast when compared with the literature of medicine and surgery of 1875.

Taking for granted that the author represented in every respect the complex title of his book, we find his first intention was to compile it in four sections, viz.: "I. The excellent constitution and temper of horses, mares, and colts; the manner of breeding them; with their proper feed and management for all exercises. II. The *Compleat Jockey's* method of dieting, physicking, and ordering the *Racehorse*, so as to be fit for any match; certain rules for having good horses, and preventing impositions and cheats. III. Various ways for making stars, blazes, and marks in the forehead, or any part of the horse's body, with other curiosities, etc. IV. The *Farrier's Masterpiece* in knowing the several causes and cures of all distempers, sores, wounds, bruises, and hurts, incident to horses; with an excellent PRAXIS, whereby any one may easily know how and when to physick, bleed, purge, rowel, dock, shoe, and shape their horses; being some peculiar observations not before made publick."

Deviating from his original plan, he intermingles the subject-matter of the sections, and adds, "A catalogue of such instruments purely necessary for Farriers, Horse Coursers, Jockeys, etc." This is followed by "Some particular observations relating to the four humours and constitution of a horse, by one of the experienc'd Racers in *England;*" and after giving several cures for the bites of mad dogs, concludes with "Some necessary observations relating to the several distempers incident to cattle."

Mr. Gent's views on "Phlebotomy or blood letting, how and

when to be used," are perhaps the most remarkable on record. He says, "Many times the letting a horse blood is immediately necessary, according to the nature of the distemper, or violence and suddenness of its attack; but as these are for the most part accidental, so the use is to be determin'd by a person skilful in the causes and cures of such distempers which require; and who is able to discern betwixt critical days and others. There are, as *Solomon* says, *Times for all things under the sun*, and among the rest, proper seasons for bleeding, which are, as the able Farriers affirm (excepting in danger of sudden death, etc.), in the month of Jan^{y}. the third and fifteenth days; Feb. 4 and 9; March 6, 10; April 15, 20; May 1, 13; June 15, 19. [Omit bleeding in July and August.] Sept. 11, 28; Oct. 8, 23; Nov. 5, 16; and the 14, 16, and 26th days of December. And the reason why they adopt these days to bleed in, is because the 12 heavenly signs are then predominant, and influence the several parts of a horse, as *Aries* the head, *Taurus* the neck, *Gemini* the shoulders, *Cancer* the stomach, *Leo* the heart, *Virgo* the belly and bowels, *Libri* the reins and buttocks, *Scorpio* the privy members, *Sagittarius* the thighs, *Capricornus* the knees, *Aquarius* the legs, and *Pisces* the feet. When either of these signs govern, omit not bleeding if possible. Now the peculiar veins to be open'd for some particular distempers, as swellings in the throat or head, defluxions in the eyes, disorders of the brain, cold distillations, rheums, fevers, lethargies, etc., open the temple veins and draw what blood is proper.

"If you suspect blindness approaching, and for all defects in the sight and optic nerves, open the weeping veins under the ears.

"To cure the Anticor, surfeits, slavers, lampas, tireing and drowsiness, open the pallat veins.

"The great vein in the neck open'd discharges the body from all impure blood and gross humours, chears the heart, and prevents sinking of spirits.

"To prevent what some call *moor-found-ring* or melting of the grease, sudden sprains, lameness, etc., or any disease of the chest, liver, and lungs, open the breast veins.

"To prevent foundering and for all excressencies bleed the thigh veins.

"Open the shackle veins in the cure of quittor-bone, crown-scab, etc.

"The veins open'd in the thighs behind, comforts the kidneys, prevents foundering, and assuages all swellings, etc.

"The flank veins open'd in fever is good, and abates swellings in the external genital organs, increases flesh and prevents Tielt-worm.

"To ease the feet and keep from foundering, open the shoulder veins behind. For hard hoofs, fretting or any ailment occasion'd by beating of the hoof, open the toe veins. The spur veins open'd in the cure of Farcine, swellings under the belly, or foundering, gives relief.

"To prevent and in the cure of the scab, manginess, and itch, the tail vein must be open'd, etc.

"Let me add a word or two more which is of great importance in the case of blood letting. To prevent distemper in a sound horse, bleed him no oftener in the year than twice, that is in the beginning of May and the latter end of December. If your horse be old, bleed him not; but rather give him such food as may nourish and increase blood. The colder the climate a horse is bred in, the fuller the blood; as, for instance, in POLAND, where the horses are so replete with blood, especially those that have youth on their side, that, by mere instinct of nature, *they find a way to bleed themselves once a year.* If you omit letting your stallions' blood, they will stand longer by you, and nature will not be exhausted. Thus much for blood-letting, which must be done either with a fleam, where the vein is great, or a launcet, which is to open small veins and fibres, where the stroke is not proper."

Gent was much more at home in his ideas of breeding and choosing horses than in treating their complaints; at least, his opinions were more correct. In breeding he firmly believed in the hereditary transmission of diseases, and therefore avoided unsound progenitors. When laying down directions for "chusing a sound horse," he was extremely lucid, precise, and systematic, displaying great ability respecting the various qualifications and points requisite to be possessed by horses for "war, cart, waggon, coach, road, hunting, racing, or riding post." He fully appre-

ciated "so noble, so serviceable, and so sensible a creature as the horse," and, in his examinations for soundness, draws special attention to the colour, make, shape, and general characters in the texture of the hoof. He avoided then exactly what we do now, and enjoins "careful examination of the hoof, for it is a *nice* part." His remarks are lengthy on "shooing," which, to do "well and with judgment, is something difficult, and requires great penetration." Although his instructions are infinitely superior to the practices we have sometimes seen carried out, and but a few years back, his great error consisted in "abating and paring the toes of the fore-feet, if possible, till they were as thin as the edge of a knife, so as to make the hoofs to be low before, and high in the quarters." Of course, this was not the only failing in his method of shoeing and making shoes.

Stumbling was said to arise from the existence of a cord or sinew, the lower end of which was attached near the top of the hoof, whence it ran over the inside of the knee and shoulder, along the neck, by the "Weasand," over the temples, under the eye, and down to his "snout, betwixt both nostrils and the gristle, and there knit the length of an almond." To cure stumbling, he cut a slit at the nose, and "perceiving the white string," which doubtless was the tendon of the *supermaxillo labialis*, took it up with a boar's tooth, and after twisting it till the horse "rear his foot from the ground, cut it asunder." Gent was pretty clear in his notions of preventing the infectious and contagious diseases of cattle. He refers to a complaint called Panetis, Blain, and several forms of murrain, amongst which we can recognise Mouth-and-foot disease, Cattle-plague, and Pleuro-pneumonia, etc. Farcy and Glanders he frequently refers to. Our talented author was a great herbalist, and believed in the efficacy of the solid excreta of our domestic animals, in grease and soaps in every form, in blood, fowls' eggs, and honey: he fired for ringbone, and then applied a charge; could cure a crick in the neck, and raise the fallen crest of a horse.

All things being considered, we cannot afford to ridicule the efforts of the age the book in question refers to, for our progress has not been as rapid as even Gent might have expected.

DISEASE OF THE MAXILLARY SINUSES.

BY W. B. WALTERS, M.R.C.V.S., INNISKILLING DRAGOONS, DUNDALK.

THE account which appeared in the *Veterinary Journal* for August, of a case of "Disease of the Maxillary Sinuses," tends to throw considerable light upon what is no doubt one of the most fruitful causes of this affection,—external injury. These cases are very difficult of detection in stables where a large number of horses are congregated, owing to the length of time which must necessarily elapse between the receipt of the injury and the appearance of disease; and in cases caused by wanton cruelty, or in a fit of momentary anger, by those who should be the horse's best friends, there is a natural anxiety to hide the cause as long as possible, so that when the patient is brought to the notice of the veterinary surgeon, all indications of external violence have, as a rule, disappeared.

The following account of a case, the later symptoms of which were of a very similar nature to that described by Mr. Paton, V.S., Army Service Corps, in your last issue, may prove interesting:—

On the 4th May, 1875, a young mare was admitted to treatment for Ozœna, which was supposed to have followed an attack of simple Catarrh. There was no visible sign of contusion or other external injury to the facial region on either side, nor any evidence of pain on manipulation, and the teeth were apparently sound. A considerable purulent discharge of a laudable character, and without fœter, was ejected from both nostrils, more particularly from the left one; and both submaxillary glands were enlarged. The visible portion of the Schneiderian membrane was of a natural colour; no febrile symptoms were present; and in every other respect the mare appeared in perfect health.

Up to the 30th of that month, the case seemed to be progressing favourably; but on that date, aggravated symptoms set in. The nasal discharge was confined entirely to the left side, was considerably increased in quantity, and assumed a fœtid charac-

ter; the submaxillary gland on the same side became more enlarged and indurated, while the corresponding one was so much reduced as to be scarcely perceptible. There was no discoloration of the visible portion of the Schneiderian membrane, a total absence of apparent ulcerative disease, and the mare continued in fair condition.

On the 8th June, a dulness and marked tenderness was observed on percussion being applied over the maxillary sinus on the near side, which led me to infer that it contained imprisoned pus; consequently, I trephined the sinus at its most inferior aspect, and found it filled with inspissated purulent matter, of a cheesy consistence, and a very fœtid character. This was carefully removed, and the sinus injected with tepid water. The inner table of the piece of trephined bone was discoloured from disease. Considerable local swelling followed the operation, but this was reduced by fomentations.

From the date of the operation to the 23rd of June, the case progressed so favourably that I had some slight hopes of ultimate recovery. There had been an almost continuous flow from the trephined orifice, gradually diminishing in quantity, and a cessation of the nasal defluxion. On this date the symptoms became greatly aggravated; the discharge from the near nostril returned, the enlarged gland increased in size, and as it was deemed advisable to destroy the patient, the recommendation was carried out on the following day.

The *post-mortem* appearances were somewhat analogous to those described in Mr. Paton's case. The lining membrane throughout the whole of the sinuses of the left side of the head was discoloured from disease; it was also considerably thickened, and covered with inflammatory patches. The cavities themselves contained quantities of the same description of caseous matter as had been removed from the maxillary sinus; collections of pus were also found in the folds of the turbinated bones, and the ossific structures themselves presented symptoms of extensive inflammatory action. This diseased condition was entirely confined to the left side of the head, the corresponding cavities on the right side being in a comparatively healthy state. The superior portion of the Schneiderian membrane was of a dark purple

hue, but entirely free from ulceration. The lungs were perfectly healthy, and a careful examination failed to detect the slightest sign of tubercle. The teeth and alveoli were sound, and the internal viscera were in a healthy condition. Externally, there were symptoms of inflammatory action surrounding the trephined orifice, but no other sign of external injury.

LAMINAL CONGESTION.

BY W. E. LITT, M.R.C.V.S., SHREWSBURY.

AMONGST the many varieties of foot lameness in the horse, there is one which, I think, has scarcely received so much attention from pathological writers as its importance demands. I allude to a particular kind of lameness which is somewhat erratic in its movements, and which differs very much in intensity, at different times, in the same animal; sometimes producing excessive lameness, at others a mere "tenderness" in one or both fore feet, as the case may be.

I may, perhaps, be accused of inventing the particular affection which I have taken the liberty of calling "Laminal Congestion;" but I take it that few practitioners will be found to dispute the fact that there is a common kind of lameness, "*before*," in the horse, which is, to say the least, difficult of diagnosis. I am aware that the lameness of which I speak has been variously described as due to "Subacute Laminitis," "Rheumatism," "Occult Splint," etc., etc.; but I have ventured to propound the theory that it *may* be due to distension of the capillary vessels of the laminæ of the foot, and that inflammatory action plays no part whatever in connection with the disease. For this theory, *per se*, I do not claim any originality; it is new only in so far as its application to the foot of the horse is concerned. For the purpose of illustration, I will compare the foot of the horse with the brain of man. In the latter, the brain is the most vascular and the most highly endowed structure in the whole system; but in the former this is not the case. The brain of the horse is only required to be supplied with sufficient blood to

enable it to carry on what I may call its mechanical functions. It is, therefore, not the highly organized structure we find in man. On the other hand, the whole of that part of the foot which is enclosed within the hoof is a perfect marvel of vascularity, and is very highly endowed with nervous sensibility. Now, as all vascular structures are subject to irregularities in the flow of blood through them, and are liable to what may be called the "apoplectic" condition, this affection in the feet of the horse may therefore, I think, with considerable reason, be so far likened to apoplexy of the brain in man. Just as there is cerebral congestion in man, so is there laminal congestion in the horse; and to carry the simile farther, amongst others, from the same causes. In the plethoric human subject the determination of blood is to the brain; in the plethoric horse the determination is to the laminæ of the feet. One instance will be sufficient to show the similarity which undoubtedly exists between what appears at the first sight, and to the unprofessional reader, two cases diametrically opposed to one another. In man, as the result of sympathy with acute stomach derangement, you may have—I do not say you invariably do—cerebral excitement or delirium; in the horse, from a precisely similar cause, you are far more likely to get lameness than delirium.

The peculiarities of the lameness due to "Laminal Congestion" are briefly as follows: It is usually seen to originate in young animals—I mean at from four to six years old; the lameness may have been first perceived whilst at work, or it may have been first noticed on coming out of the stable. The animal walks soundly, but on trotting it seems to be excessively lame on one fore leg. On examination, nothing whatever can be seen or felt. A removal of the shoe, and careful inspection of the foot, discloses nothing abnormal. There is no heat, no tenderness, no swelling of the limb,—absolutely nothing to show what causes this excessive lameness. There is nothing in the action to guide one to a correct conclusion, beyond the rather quick way in which the foot on the lame side is snatched up. The foot is put down flat upon the ground, and the shoe is worn evenly. There is never any "pointing" in the stable nor heat in the foot. There is no tendency to contraction, or the formation of horny rings,

which is the case in Subacute Laminitis, each ring marking the date of an attack. The lameness is erratic, and may pass off in a day or two, or it may last as many weeks. Unlike Navicular lameness, it rather becomes aggravated by exercise, and if the horse be forced to work for a time, it becomes so lame as scarcely to be able to walk. If the horse kicks his toe against a stone or any inequality of the ground, the lameness is increased for a few steps. The first attack of lameness generally passes off quickly, and the animal goes sound for an indefinite period—sometimes for months; but sooner or later it returns, and this time it is not so easily got rid of. It does, however, yield to treatment, but again returns; and this goes on until at last the lameness becomes chronic. During all this time the appearance of the foot does not alter; it remains as sound in appearance as it was at first.

With regard to cause, irregularity in feeding and over-feeding are, I believe, the two most powerful inducing agents; but I consider that in the majority of cases, if not in all, constitutional predisposition is a necessary concomitant.

It will be worth while, perhaps, to consider whether there is any outward sign by which an animal possessed of this unenviable peculiarity can be detected. In the first place, all kinds of horses are liable to this affection, but not all in the same degree. The animal which is most liable being the half-bred horse, next the thorough-bred, after it the cart horse, and last of all, the pony. It matters little in which of these it is seen; the animal is invariably a good feeder, of full habit and sanguine temperament. The bad feeder, the animal which never carries much flesh (I do not wish to be understood to mean that these two are synonymous), the animal of the nervous temperament, is seldom affected. The formation of the foot, so far as external appearances are concerned, is good,—that is to say, it is natural in appearance, being neither unduly flat nor contracted. It will, however, if closely observed, be noticed as a rather large and open foot; so much so as to lead to the remark (which I have often heard from an owner) that a horse having such a beautiful foot must be lame somewhere else. I have no doubt most practitioners will have noticed this fact, viz., that the good-

looking foot is frequently the seat of lameness; whilst the narrow contracted foot is often borne by a sound animal. It appears to me that the same change takes place in the capillary vessels of the laminæ in these cases, as that which takes place in the minute vessels of the human brain so frequently, viz., a distention which, as the result of undue determination to the part, causes in the one case chronic lameness, and in the other that condition which is known as softening of the brain. Of course this is the ultimate result, and is only produced by repeated attacks. In the first instance, the vessels possess sufficient tonicity to quickly resume their normal calibre; but gradually they loose their contractile power, and remain in a permanently distended condition; the natural result being continuous pressure on the nervous filaments which accompany them, and chronic lameness. In conclusion, I have only to state that—firstly, the subjects of this disease are, for the most part, constitutionally predisposed to the apoplectic or congestive condition; secondly, that the disease itself is induced by anything which tends to cause circulatory derangements; thirdly, that it ultimately leaves the animal in a perfectly useless and unserviceable condition.

CONTAGIOUS PLEURO-PNEUMONIA IN IRELAND AND NORFOLK.

BY W. A. COX, M.R.C.V.S., ASHBOURNE, LATE INSPECTOR TO THE IRISH VETERINARY STAFF.

As an ex-Inspector of the Veterinary Department of the Privy Council Office, Ireland, I read with special interest your editorial observations upon the reports of Mr. Chambers and Professor Ferguson.

Reports issued by any department, no matter what it may be, are certainly not likely to contain matter that will in any way reflect upon their ability or energy, either individually or as a body, and must be accepted with reservation.

Mr. Chambers has, it appears, been sent to Norfolk to investigate the correctness of the oft-made assertion, that the majority

of the outbreaks of this malady are either in Irish cattle, or in our home stock that have been infected by them. As deciding the question, his investigations are useless; nor can I notice that they have added to our information upon any point of special importance. After quoting statistics which, as data to draw his conclusions from, are valueless, he says, "We have no positive proof of the cattle *in question* being *all* directly imported from Ireland," but he adds, "that the *majority* sold at certain markets *were*.

As specially employed, it was his duty to have known whether those animals that were not imported—as he must wish to infer—had been in contact with diseased animals, and whether such were Irish or home-bred; but on this head he is silent.

He speaks of the doubtful question of the period of incubation, and of the necessity of a series of well-conducted experiments being necessary to elucidate the pathological phenomena. These experiments would be very costly, and unless on a most extensive scale—an impossible one—they would be valueless. A large number of animals would be required, and the investigations must extend over a lengthy period; they would occupy the attention and care of several individuals: for these matters should be conducted by persons previously practically acquainted with the malady, conversant with its peculiarities and eccentricities, and who would—taking an interest in it—detail every occurrence; nor should their observance be left to one individual. But these experiments are not necessary. In an extensive county practice,—such as mine has been for fast approaching twenty years,—a practical painstaking observer would see more than he could by such means, let the experiments be conducted on even the largest imaginable scale.

Those best acquainted with the disease know that it varies much in the severity of its attack. I have known a herd attacked, and most of the animals have been affected; but the disease has been so mild, that not more than fifteen or twenty per cent. died. On the other hand, those on the adjoining farm having taken the malady, it has proved so virulent that sixty to seventy-five per cent. have been lost. Hence, it may be inferred that the experiments might lead, in a great measure, to

erroneous conclusions. The symptoms, too, vary to a very great extent. But I find that I am running away from my subject.

My experience (and I think I am not egotistical when I say that it is as large as, and perhaps very much larger than, that of any Inspector I know on the Staff) leads me to state that the interval between *the time of the introduction of the contagium into the system, and the outbreak of the disease*, known as the "latent period," is, as a rule, about five or six weeks, more frequently longer than briefer. Mr. Chambers must have drawn his deductions respecting the period of three weeks being the *mean* time of incubation—in fact, he affirms so—from the statistics, but for this purpose they are totally unreliable. What does he say? "By taking three weeks for the average between *dates of purchase* and outbreak." He does not say *date of infection*, nor does he attempt to prove or disprove that such animals had the disease latent at that time or not; but by taking the date of purchase as the starting-point, he leads us to infer that they must contract the disease at that period.

There can be no doubt that animals becoming affected within the first month, and many of those within the second month, had the malady dormant in them at the time of exportation.

Despite his affirmation, "that a diseased animal cannot be shipped at the Irish ports, unless under very exceptional circumstances," I shall prove that animals are frequently shipped to England, which, if not actually showing symptoms of the disease at the time of embarkation, have it latent in their system.

It is a rule in the Irish Veterinary Department to seize affected animals, *but to allow those that have been in contact with them, whether of the same herd, from the same farm or locality, or which have been in the same lair, to be shipped.*

This neglect (*for it is neglect, the law providing for such cases*) is constant; in fact, the law upon the point is entirely put aside; *and it is the great and principal means of introducing diseased Irish cattle into this country.* This is the loop-hole, and it makes Irish inspection, as a protective measure, a nullity and a sham. If Mr. Chambers' knowledge of this disease *was very extensive*, he would hesitate to tell us that an animal cannot be shipped in such a condition, that the malady would break out on

the voyage. When the disease has been incubating for some time, the excitement of embarkation, the confinement on board the vessel, and the peculiar mode of transit, would, in combination, so excite the system that the ultimate development might and would occur on the voyage or immediately after landing; although no disease was perceptible immediately prior to or at the time of shipping.

A summary of the preceding remarks gives the *key to the Norfolk mystery.* Briefly stated, it is this: *that so long as animals which have been in contact with affected stock are allowed to be shipped to this country, without any statement or caution being given, and are sold as healthy, so long shall we have the disease introduced.*

When an Inspector, I called attention to this subject, but was told nothing could be done, as it would cause "bother!" But it could be easily managed, and without "bother." Such animals should be *interned,* under the care, if thought advisable, of the owner, but with the supervision of the Department. Fat animals might be quickly sold under the same restraint, and slaughtered in some place not far distant; "stores" fattened off, and sold in a similar manner, or the horn branded with date and month. Their *habitat* should be known to the authorities, and inspections should take place at specified and proper intervals, until risk of contagion had ceased.

Where no prior knowledge or blame may be attached to the owners of these animals, they should be compensated for any loss or expense caused by such proceedings; as it cannot be supposed that individual interest should suffer for public weal.

Thorough and searching investigation should be made in every case to discover the origin of such outbreaks, and I would have them traced with more tenacity than one that has recently taken place.

It might be imagined that I am disposed to agree with the rumours that have attached the *entire* blame of infecting the Norfolk stock to Irish cattle, and that such animals had the disease dormant at the time they were shipped from Ireland. But I do not agree with them altogether. Mr. Chambers correctly says, "that country districts are comparatively free

from disease," but avoids mention of urban and suburban localities. In these a very considerable amount of disease exists, *entirely unknown to the authorities.* How is this? There are several causes in operation, but it is only with one that we shall deal.

As an example, we will take Dublin and its environs. The cattle-keeper, having an animal unwell, hesitates to report it; having no confidence in the diagnostic ability of the executive, he says, "I may have the disease, or may not, but any way they'll say it's it, if they look at it, and I'll be restricted, maybe fined; so I'll be sure before I report." He hopes against appearances, but meanwhile the sick and healthy are together, often to the infection of the latter. But in this respect would he be much better if he reported? For it is seldom that there is convenience of isolation; nor does the Department allow them to move them in any way; neither do they disinfect, or instruct the owners upon any point.

If the case, not being reported, proves nothing more than a "cold" or other trifling ailment, he congratulates himself upon having escaped restrictions—probably the penalty too—that would, without doubt, have been imposed.

Some run all risks rather than be so annoyed, and, as the case may be, without just cause,—escaping all knowledge of the Department, they sell stock, whether it has been in contact or not; it is mixed with others, exported, and spread throughout the country; and in some of the animals doubtless the malady exists. The period of three weeks—Mr. Chambers' average—very accommodatingly approximates the period of restrictions. Why, he must know such a statement is absurd, unless his experience of the disease is very limited. This period past, animals from the same shed, and which have been in contact with those affected, are allowed to be sold. Under such regulations, what is the use of inspection? Is it not a failure?

But to return to cattle-keepers. They quote in support of their opinion respecting the Staff, cases that have been brought before legal tribunals, where the evidence has been opposed by *non-official* veterinary evidence, and such cases have, without exception, been dismissed, the Inspector being *mistaken.* Non-

professional but practical evidence has frequently controverted their opinion with success; nor is this surprising, when I have before me a newspaper giving an account of a trial where the Inspector, now immediately under the Director, and figuring somewhat prominently before the public, affirmed that it took two months to cure "Sheep-scab!"

I state, of my own knowledge, an instance in which restrictions were enforced in an animal suffering from tubercular disease of the lungs. In another instance, an animal was seized when about to be shipped, and quarantined, and after a week's quarantine it died. A *post-mortem* examination showed that no Pleuropneumonia existed. Whether the owner of this beast was fined and charged the expenses, besides losing his cow, I do not positively affirm, but I believe it was so. But these examples might be multiplied *ad infinitum.*

I notice Mr. Chambers urges that any alteration would restrict the trade; it would probably bring about a re-organization of the Department, and there would then be a system, which at present does not exist.

A knowledge of the blunders made by the Staff prevent cattle-owners from reporting; they have no confidence in them; and as long as the malady exists in secret, so long shall we have animals sent to us with it latent in their system.

But can these things be remedied? They might, by *preventing animals that have been "in contact" with those diseased from being exported.* This is an easy matter, if a case of disease is detected on the quay; but unless competent men are employed, it would be running a great risk, as they might seize animals suffering from other diseases of the lungs.

Compensation should be made for individual loss, when such detention is necessary. It may be argued that the detention would interfere with the trade; but if compensation was made for loss, nothing would be said, and it would be found a far better course than the present one. Information and assistance would be freely obtained, which is now unavailable, and knowledge gained that would be of incalculable benefit.

Mr. Chambers states that Foot-and-mouth disease exists to a great extent amongst home stock, without being referable to

Irish cattle. What would he say to the outbreaks of this disease that have taken place since his *tour of investigation*, amongst Irish cattle brought to Liverpool, Manchester, and elsewhere?

The introduction of the Slaughter and Compensation clause.—This measure, in fairness, ought to be introduced into Ireland, and in common with the appointment of efficient officers, would show to the Department that they are very much "in the dark;" where they now have one case reported, they would have numbers. The stock-owner would work hand-in-hand with them, and the disease would be almost entirely cleared away. I would supplement this by permission to slaughter animals that were fat or "meated," even had the disease commenced—subject to the opinion of an Inspector—for food.

Rural Inspection.—The regulations respecting the officials on the Irish staff are, so to speak, most eccentric; in fact, I purpose shortly laying them before the public. But, in country districts, veterinary surgeons in practice might be allowed to take this post, being paid either a fixed salary, or for each case as it occurs; the latter, however, is rather objectionable, for certain reasons: or an Inspector might be appointed to an extensive district.

This extension of inspection would enable the authorities to prevent animals from infected places being sold or sent away, and would be an invaluable auxiliary to port inspection, in the suppression of disease.

The prevention of the introduction of diseased animals into Ireland.—This clause is held by the Department in complete abeyance; and under the present system Mr. Chambers may well say that the Irish stock-owner might have reason to complain if much stock were imported. The Irish cattle-keeper has to bear loss, and pay to a Department that does nothing for him, except annoy and trouble him for no sense or reason.

(*To be continued*).

Editorial.

THE GENERAL EDUCATION OF THE VETERINARY STUDENT.

THE general educational acquirements of the young men who enter our schools with the intention of making the veterinary profession their life occupation, cannot be a matter of indifference to those who are interested in the advancement of our science.

The day has not long gone by when no preliminary test whatever was resorted to for the purpose of ascertaining the amount of knowledge a candidate for admission to the schools possessed, and in those days it appeared to be deemed a sufficient qualification if he could raise sufficient money to pay the all-important fees for the brief and mercilessly scanty course of instruction he was to receive. Hence it was that the graduates were of the most mixed and diverse character. There were those, it may be truthfully said, of no education, who were barely able to write their name perhaps, and were certainly unable to speak their own language properly; others, few in number, who could have passed a superficial examination in the rudiments of a very elementary education; and others again—alas! still fewer—who had received a fair English education.

It is needless to say that this neglect of what is deemed to be of vital importance in every other branch of science, operated most perniciously on ours, and in many respects degraded it to the very lowest position a profession could descend to. The utter indifference with which the country has treated veterinary science tended to keep it in this condition: as the schools had to depend for their existence, not upon the quality, but the quantity, of those admitted; consequently, improvement in any direction became next to impossible, and the reputation and welfare of the profession, as well as the country itself, suffered seriously. Nothing can compensate for the want of education—general, scientific, and technical—and the *fons et origo mali* in our special department of medicine has been this want.

So lamentable and disreputable had the evils of the system become, that a short time ago a preliminary or (wrongly termed) "matriculation" test was at length adopted by the schools. This merely consists in requiring the student to give proofs of his being able to write, to read aloud, and to know something of dictation, English grammar, the simple and compound rules of arithmetic, and simple rule of three. This was looked upon as a great advance, and certainly it was a short step forward; and while it testified to the deplorable state of affairs which had existed for much longer than half-a-century, the measure, if carried honestly into operation and to its full extent, affords a guarantee that candidates for admission are at least on a level, so far as their general education is concerned, with ordinary school-boys of twelve or fourteen years of age.

But it must be evident to the meanest comprehension that this test, while it excludes the absolutely ignorant who would be unfit for any occupation in which a trifling instalment of education is required, is yet far below that necessary for such an important and exacting study as that of veterinary medicine. It scarcely affords any guarantee that the candidate is, by previous training, capable of understanding and receiving with advantage the instruction which should be afforded him in the school; nor does it ensure that he will be able to maintain and enhance the credit of his profession when he has obtained his diploma, and is launched into public life. It is surely not asking too much, if we demand that young gentlemen who are desirous of enrolling themselves as students of veterinary medicine, should be required to pass the same preliminary examination to which the medical student, or even the druggist, has to submit. Why should the teachers at our schools have to pass a large portion of their valuable time, if they wish to benefit their pupils, in trying to inculcate what these should have known before they entered the class-room? We may impose on the public by showing a most startling list of subjects upon which the candidate may elect to be examined; but we know for a fact that ninety per cent., or even more, could not stand an examination in any one of these, and yet several of them ought to be compulsory. The candidate should not only be compelled to pass in the

subjects already laid down, but, besides (and without selection or election), in mathematics, English history, geography, Latin and Greek, at least one modern foreign language, physics, and the rudiments of natural history. Until recently we have defamed our science by tacitly allowing it to be inferred that education was unnecessary for its study; then we have admitted that the smallest amount of education possible is sufficient. Surely if the advancement and reputation of our profession rests with ourselves, we have acted most perversely and stupidly in promoting our own interests. If we place the value and the claims of our science so miserably low, can we expect the public to gainsay us, and place it higher? If we assert, and testify, that an ordinary ragged-school education is sufficient for the candidates who seek admission to our colleges, can we expect the public to look upon us as respectably educated, much more scientific men?

This question of education has been, unfortunately, left by the members of the profession to the schools, and the schools have, for palpable reasons, not acted wisely, either for themselves, the public, or the profession. It is now urgently necessary that a proper educational test be applied to the candidate before he is permitted to commence his medical studies, and the more severe and extensive this test may be, so the more will it profit the schools, the profession, and the public.

ARMY VETERINARY SURGEONS AND GOOD-SERVICE PENSIONS.

FROM almost the highest military rank down to that of the private soldier, for many years there have been special pensions awarded by the State to individuals belonging to the several grades, for good, distinguished, and meritorious service. These pensions are not only beneficial in a pecuniary point of view, but they distinguish the recipients as men who have faithfully and worthily served their country, and are an inducement to others to follow their example. Until a few weeks ago, the only departments in the army exempted from these pensions

were the clerical and the veterinary, and now the latter department is the solitary exception. Two instances have recently occurred in which a good-service pension has been conferred upon chaplains, and, no doubt whatever, most deservedly. One of these chaplains joined the service in 1854, and served in the Crimean and North China campaigns.

What we now desire to point out is, that our department in the army is solely exceptional in the matter of good or meritorious service pensions; and yet it cannot be denied that among the senior veterinary officers there are at least several who have seen far more war service, who have been longer in the army, and who have performed their duties with as much zeal, fidelity, and distinction (even under fire) as some of those who are recipients of these awards. We have not the least desire to draw invidious comparisons between the veterinary and those other departments eligible for such marks of favourable recognition, as each has its special tests of merit; but we may, nevertheless, draw attention to the fact that the duties of the army veterinary surgeon, particularly during active service in the field, are of a far more onerous character, and are at all times accompanied with far more danger, than those of the chaplain. We trust that when those ameliorations in the condition of army veterinary surgeons, which are now so urgently required and so anxiously looked for, are taken into consideration, this of good-service pensions will not be forgotten. It will, at a very small cost, confer a boon upon our colleagues in the army, and remove one of those unsatisfactory and undeserved exceptions which certainly afford cause for complaint and discontent.

THE NATIONAL VETERINARY BENEVOLENT SOCIETY.

IN our correspondence will be found an appeal in favour of the National Veterinary Benevolent Society, from a well-known and respected member of the profession, who, though never likely, we trust, to seek its aid, yet would fain see it in a condition in which

it could minister to the wants and necessities of those amongst us, and their families, who might, through unforeseen circumstances beyond their control, need help. We most willingly and cheerfully give him what assistance we can in drawing the attention of the veterinary profession to the existence of this most commendable Society, and would join our appeal to his in urging upon practitioners who have not given it their support to do so without delay. As our correspondent justly remarks, in a poor profession like our own it is somewhat strange that no kind of provision should have been made for its (through no fault of their own) unfortunate members. The veterinary surgeon incurs great and frequent risks in the practice of his profession; daily risks incidental to the handling of powerful and not always docile animals; risks with regard to the transmission of diseases of a most fatal character from the creatures whose ailments he ministers to; risks from exposure to the weather by night and by day, at all seasons of the year; and the risk of non-success after years of severe toil and anxiety. Did all these risks threaten the veterinary surgeon alone, then would our plea lose much of its force; but the misery and pain of misfortune only too often fall upon those nearest and dearest to him, and who are least able to contend against their hard fate.

Charity, though it should commence at home, need not localise itself there. Indeed, there never was perhaps a period in the history of mankind when charity was more common and more cosmopolitan than in our day, and the crowning virtue of Freemasonry now appears to have extended itself far beyond the generous craft. In our profession there should be some indication of a higher motive than self-interest, than indifference to the hardships of others; and in no way could we manifest our interest in, and sympathy for, our co-labourers in a laborious, badly-remunerated, and risky occupation, than by aiding in promoting the good work which a Society like this can accomplish, by contributing to its funds. A very trifling donation from each member would effect a world of good to many worthy brethren. It lies in the power of every one to convert afflictions into blessings, through the sanctified influence of charity; and we earnestly hope that Mr. Field's praiseworthy endeavours to

enhance the reputation of the veterinary profession—so far, at any rate, as *benevolence* is concerned—will be promptly and bountifully acknowledged in next year's Financial Statement of this Society.

THE MILITARY MANŒUVRES AT ALDERSHOT.

THIS year the military manœuvres, though not on such an extensive scale as on two previous occasions since their institution in this country, were yet notable for the very large number of troops of all arms—perhaps the largest number—ever assembled at our permanent camp at Aldershot; and also for the extremely unfavourable weather which prevailed during nearly the whole period over which they extended. The month of July, according to the Registrar-General's report, was unusually cold and wet. The mean temperature at the Royal Observatory, Greenwich, was 5·90 degrees and 2·6 degrees below the average July temperature in one hundred and three years; and the amount of rain in the month was 5·3 inches measured on sixteen days, which exceeded the average rainfall of July in fifty-nine years by 2·8 inches.

Such was the character of the weather during the month in which the manœuvres, or "summer drills," as they have been termed, were carried out. The following was the number of horses present with the different branches of the service:—

	Officers' horses.	Troop horses.
Cavalry	308	2253
Artillery	60	2083
Royal Engineers	20	400
Army Service Corps	10	1090
Police	—	50
Staff and Infantry	400	—
Totals	798	5876

Of this large number of horses, the whole were picketed in the open air, without shelter of any kind during the latter half of the drill period, and about three-fifths during the whole time the troops were assembled at Aldershot; these, as has been said, were exposed to the full severity of weather such as has not been experienced in July for more than a century. The force was divided into two army corps, and the bitterly cold rain poured almost continuously while these were encamped. During standing camps and manœuvres are always particularly anxious times for regimental veterinary surgeons, but on this occasion there were more than the ordinary causes for anxiety and solicitude. At one period, for a number of days, not only were the horses exposed to the chilly rain that poured upon their unprotected, well-groomed skins, but they stood in a bog, immersed over the hoofs in water and mud. As

the poor creatures were fastened to the picket-lines by the head, and one hind leg tethered by a heel-rope in the opposite direction, to prevent if possible injuries from kicks, they looked, as indeed they must have felt, very miserable.

There can be no doubt that if the exposure and unseasonable weather had been protracted, the consequences might have been very serious to the horses. But as a matter of experience—owing, in fact, to their excellent health when they entered upon the duty, and also to the very judicious order given by H.R.H. the Field Marshal Commanding-in-Chief, when he visited the camp on one of its worst days, that blankets to cover the horses were to be issued—no immediate loss of any moment could be traced to this cause. That chills and other depressing influences which are in operation upon animals so situated, do induce, indirectly, functional derangement of important organs and internal congestions, cannot for a moment be denied; and it was observed that the horses of the force suffered to some extent from these causes, which, when combined with special exciting influences, oftentimes lead to serious complications.

A word as to the value of—nay, necessity for—protecting horses with a blanket during cold wet weather. The correspondent of the leading daily journal appears to be possessed of the notion that army veterinary surgeons are opposed to the adoption of this protection, and, to our knowledge, on two different occasions he has made a statement to this effect. Well, we can only say that we have not yet met with a member of the veterinary profession in the army, who has had any experience of active or home field-service, who has ever objected to the use of blankets for horses on such an occasion as this; on the contrary, they have borne testimony to the immense benefit such a protection confers, and how greatly it tends to maintain health and efficiency. Nothing can be more cruel, nor yet more like to induce debility and disease, than taking a number of thoroughly groomed horses from their stables, and fastening them night and day, by head and heel, immovably in one position, while heavy heat-robbing rain descends upon their back—spine, sides of chest, and abdomen. Horses at large in a field, and ungroomed, may brave such weather with impunity, because they can move about and choose their own position, while nature protects them by an abundant unctuous covering which makes them almost rain-proof.

The advantages of a blanket—especially when doubled over the back and loins—were immediately apparent on this occasion, and we have no hesitation in saying that much illness, if not mortality, was averted by the thoughtfulness of His Royal Highness. The chief drawback to the issue of blankets is the trouble of carrying them about; and this might lead us to consider whether we have done wisely in discarding the blanket under the troopers' saddle, and adopting the felt *numbnah*. The Germans carry the blanket under the saddle, and in our army it was so carried previous to 1860.

The daily ration of forage during the inclement weather was, for troop horses, ten pounds of hay and fourteen pounds of corn; transport horses received an additional two pounds of corn.

In connection with preserving the health of troop horses while in the field, much may be done by a judicious selection of picketing ground. The lowest level in a very low-lying bog would scarcely be the site an experienced army veterinary surgeon would indicate as suitable for picketing horses, when gentle slopes and dry ground were near. Infantry may contrive to be comparatively comfortable on low ground, even during rainy weather, but, if possible, mounted corps should have higher and firmer ground.

Several fatal cases of Muco-Enteritis occurred from the animals eating sand with their forage, and heather, brackens, and young pine-tops. One horse died from intussusception of the duodenum; two perished through rupture of the anterior aorta, both occurring in one regiment. One of these cases was somewhat curious. During a cavalry skirmish, one trooper rode at another to capture him, and the two horses came violently into collision. The attacking horse and rider fell, and apparently got the worst of it; but almost immediately the other horse, which had been standing when it received the shock, began to tremble, then it staggered a few paces, and dropped dead. In the other case, the blood-vessel was ruptured while the animal was lying entangled at the picket-line, and struggling to free itself. In both cases the walls of the aorta were found to be attenuated and weak. Another death was reported from rupture of the diaphragm. This lesion is not uncommon among troop horses undergoing severe exertion. On previous manœuvres, several cases occurred among the draught animals.

Several cases of Congestion of the lungs occurred; these were in two or three instances attended by symptoms and *post-mortem* appearances not unlike those of Cerebro-spinal Meningitis. But these exceptional features may have been due to the Congestion of the spinal cord, brought about by the cold rain beating on the back for so many hours. These were cavalry horses; and in addition to the exposure, their work was frequently very severe and exhausting.

Altogether, of this large number of horses, only nineteen died: a remarkably small per centage when we consider the nature of the work performed by cavalry, artillery, and transport—particularly the latter—and the weather. Eighteen horses, in addition, had to be destroyed for injuries. Of these, fourteen had sustained fractures of the limbs, caused by kicks from other horses while standing on the picket lines. One had the flexor tendons of a hind leg divided immediately above the fetlock, during the night: blood was found on the hind hoof of the horse standing on the same side, so that it was surmised that the wound was the result of a kick. Two horses of one regiment sustained compound fractures of the metatarsus, just above the fetlock. The regiment to which they belonged charged at a rapid pace across the "Long Valley" during a review, and just as it was halting these two horses fell to the rear with fractured limbs. Some rather rough ground had to be passed over in the charge, and this may have caused jostling and crowding among the troopers, and treads and kicking. A horse was destroyed for incurable broken knees—open joints—caused by a fall during a skirmish.

Very few sore backs were reported, and these few were of a trivial character. The other casualties were nearly all due to kicks on the picket lines, and heel-shackle or rope abrasions.

Altogether, though the number of fatal casualties was somewhat large, yet it must be confessed that, looking to the special circumstances attending the manœuvres this year, and the great disadvantages to be overcome, it is marvellous that they were not far more numerous.

The number of fractures, contusions, and other injuries might be very considerably reduced if a double or Y-shaped shackle was used to fasten the hind leg, instead of only a single shackle as at present, which, of course, leaves one limb quite free to break bones and tear the flesh of the animal that has the misfortune to be pegged-down alongside it.

Still, fatal injuries to horses are inseparable from camp life and these exacting manœuvres; and though they might perhaps be reduced by improved picketing appliances, yet we think that this year, more than any other since these peace battles have been introduced, the veterinary officers engaged may be heartily congratulated upon the large amount of success which attended their exertions to maintain the health and efficiency of the horses under their charge during a very trying period.

UNIVERSITY OF EDINBURGH.

We have much pleasure in announcing that the University of Edinburgh has conferred the degree of LL.D. on Dr. Burdon Sanderson, F.R.S., one of the members of the Examining Board of the Royal College of Veterinary Surgeons. This distinguished testimony to Dr. Sanderson's valuable services to medicine—human and comparative—is noteworthy, and we gladly accord him our felicitations on the high honour conferred upon him by one of the chief universities in Europe.

FOOT-AND-MOUTH DISEASE.

Aphthous Fever is now widely prevalent in England, and has already caused much loss among cattle, sheep, and pigs. Even the royal herds have not escaped a visitation, and it is probable that the scourge will assume a still wider and more serious extension. Whatever cattle-dealers and others may say to the contrary, all medical testimony of any value whatever proves that the malady owes its diffusion solely to its contagious and infectious properties, and that its extension is due to the absence of anything like an efficient organisation to suppress it. The vacillating, unequal, and notoriously imperfect sanitary system now in existence cannot be expected even to check its spread, let alone extinguish it; and until this is recognised we may expect to see the malady as harassing and destructive during this as in previous

years. Experience teaches us but little in this respect, and that little marvellously slowly. Policemen may be useful in tracking a thief or a housebreaker, but their abilities to cope with an insidious contagious disease among animals may be questioned by those who know anything of its nature and mode of extension. It is only the old story of "penny wise and pound foolish;" and still we complain that so much money is lost every year through the ravages of preventible diseases!

RUSSIAN HORSES.

RUSSIA, although the number of its horses is gradually decreasing, has still a far better supply than any other country in Europe; having, as Herr von Langenfeldt, quoting from the returns of the Central Statistical Bureau of St. Petersburg, informs us, almost three times the number of horses in proportion to its population that Prussia, England, France, or even Austria possesses. There are, in fact, upwards of 20,000,000 horses in Russia, or about twenty-seven to every 100 inhabitants. The proportion is much greater in particular districts—notably Siberia, which has a horse to almost every man of the population. The eastern and south-eastern governments are the next best provided; afterwards come the central governments. Poland, Finland, and Caucasia are ill supplied; still they are not so badly off as the south and south-western governments, where oxen have chiefly to be used for agricultural purposes.

There are four great breeds of horses in Russia—the steppe horse, the mountain horse of Caucasia, the forest horse of the north, and the draught horse, known as the Bitjug. Foremost among the steppe horses is that of the Don, descended from an old Tartar race, which has been improved by crossing with Arab, Persian Tscherkess, and Turkish breeds. They surpass all the other Russian horses in lightness and fleetness. Their pre-eminent characteristics are keen sight, a swift untiring pace, combined with the power of living on scanty fare. The best of them are either taken for troop horses or sold into the interior. As they live out all the year round on the steppe, they are accustomed to changes of climate, and are consequently extremely suitable for field service. The Calmuck horse, belonging to the steppes in the government of Astrakan, and of a Mongolian or Tartar breed, is small and ugly, useless for draught purposes, but alike hardy and spirited. A ready sale has always been found in Khiva as well as Russia for these horses, which used formerly to be largely in request for mounting light cavalry troops. The Kirghese and Bashkir horse is small and ugly, like the Calmuck, to which it is related. It is more muscular, however, and larger boned, is never fed in stables, and is able to bear both hunger and thirst with great endurance. Among this breed of horses excellent trotters are frequently found, and command high prices. The Karabajhsk is the most celebrated of the Caucasian horses, and is greatly esteemed throughout the whole of Russia. The breed, pro-

duced very many years ago from Truchmenisch and Arab stallions, is distinguished by extraordinary instinct, quickness of hearing, and a remarkable power of maintaining its equilibrium—which latter quality renders it of inestimable value in mountainous districts. The most generally diffused breed in Caucasia is the Kabardinisch, or Tscherkess, which has sprung from crossing different mountain races with Arab horses. It is large, strong, spirited, cautious, and sure-footed, recognizes places readily, and stands the vicissitudes of both heat and cold with equal indifference. The largest and most powerful of these horses are found in Great Kabarda, and are used for mounting the Caucasian division of dragoons. Among the northern horses the Tschmud, which has been bred in Lithuania for centuries, is the best known. It is small, and has short feet, is good-tempered, enduring, light in harness, pleasant to ride, and exceedingly useful for farming purposes. These horses are most abundant in the western portion of the government of Kovno, but are likewise found in other north-western governments, as well as in Poland. The Kleppers, natives of the Island of Oesel, are descended from the Tschmud, and are equally small, but remarkably strong and good-tempered. Unfortunately the race is almost extinct, the pure breed being preserved only by the Esthonians. In Courland it is mixed with the double Klepper, which is a larger but less powerful horse. The Obvinsk race, in the governments of Perm and Wiälka, is descended from certain Courland Kleppers transported by order of Peter the Great to Count Strogonoff's estates in the first-named government. The existing breed, which during the last few years has lost its original purity, is well shaped, and generally of a yellowish tinge of colour, with a black stripe along the back. These Obvinsk horses are patient, lively, and never tire in their pace; they have, however, no great strength, and cannot be used to carry heavy weights. Among other northern horses are those of Kasan, bred from Tschmuds and Tscheremisses, and useful as post-horses; the Mesenki, found in the government of Archangel, and distinguished for their strength and endurance; and the Pinegi horses. In Finland the true Finnish breed is only met with in the government of Tavashus. The Altai horses of Siberia, which are wonderfully strong in the leg, are used for the trade caravans. The Bitjugs are natives of Central Russia, and take their name from the river Bitjuga, in the government of Woronesch—in the rich meadows of which they thrive. They are of tolerable size, extremely strong, and suited for heavy work as well as for quick driving. Unfortunately this fine race is nearly extinct.

At the time of the last returns, there were seven Crown studs in Russia and one in Poland, containing altogether 3,602 brood mares and horses, with twelve Crown stables, having 945 stallions. The Chrjanov stud, purchased by the Crown thirty years ago from the heirs of Count Orloff, is divided into three sections, one devoted to pure English horses, another to saddle horses, and the third to trotting horses. The Derkuli stud breeds English carriage-horses; the New Alexandrov, a kind of half-blood saddle-horse; the Simarevsk, thoroughbred Arabs; and the Strjeletzl Oriental saddle-horses. In the Orenburg

studs horses are bred for the light cavalry and the artillery. Russia further possesses 2,444 private studs, having 6,496 stallions and about 70,000 brood mares, besides upwards of 69,000 stallions and 620,000 brood mares in the Copack and steppe "tabunes." Horse-breeding has decreased on private estates since the emancipation of the serfs, and many of the studs have been broken up, and have passed in part into the hands of the peasantry. In Russia there are 380 horse fairs, at which about 150,000 animals are annually sold, out of about 263,000 brought to market. The average price per horse is sixty roubles; consequently the yearly returns amount to 9,000,000 roubles, or a million and a quarter sterling. The imperial authorities announce an exhibition of Russian-bred stallions and mares at Moscow September (this month), when about £3,000 are to be distributed in prizes.

CONTAGIOUS PLEURO-PNEUMONIA IN IRELAND AND NORFOLK.

(*Continued from page* 126.)

PROFESSOR FERGUSON'S report is of a more important and comprehensive character, and we can do no more than give it *in extenso*, reserving our observations on the malady for a future opportunity. He writes:—

"In reference to the subject-matter of several reports, official and otherwise, stating, among other things, that to Ireland Great Britain is principally indebted for the repeated introduction into, and continuance of, Pleuro-pneumonia in the latter country, I have the honour to report, for the information of the Government, that as a result of long, careful, and practical investigation into this question relative to Pleuro-pneumonia, between the stock-holders and veterinary authorities of Great Britain and those of Ireland, I am unable to discover any reasonable grounds for coming to such a conclusion.

"It is to be borne in mind that within the last two years no animal imported into Great Britain from Ireland, and becoming, after such importation, affected with Pleuro-pneumonia, has been traced to have come from an Irish herd, farm, premises, or place amongst, on, or in which such disease had existed, within the time usually accepted as the period in which the disease can be in a state of incubation in the system, although every facility is afforded by order of the Irish Government for such inquiries.

"That many Irish cattle, on or after their importation into Great Britain, are more liable to contract contagious or infectious disease than native British cattle, can be easily understood, when the privations and hardships to which they are exposed during transit from the farms and pastures in Ireland, on which they had been reared, to the farms or holdings in Great Britain, receiving them as stores for feeding in confinement, are taken into consideration, as well as the very different

treatment to which they are there subjected from that to which they had received in Ireland on their native pastures. The more debilitated the animal system becomes from privation and hardship, such as those undergone by such Irish exported cattle during transit by steamships and railways, the more feeble are its powers of resisting the influence of infection or contagion, and the local causes of disease, whether infectious or otherwise.

"Independent, however, of such predisposing causes of disease, it is a well-known fact that the collection of a large number of animals from their different native localities, within a confined space, into one place, such as on board ship or in a cattle-receiving pen, induces disease, particularly if the animals so collected are obliged, as in the cattle-crowded holds of cross-channel steamers, to respire impure air such as that which, from want of ventilation, has been several times used in respiration, and thus had its vitalising power consequently diminished.

"The prevailing opinion as to three weeks being the shortest period during which Pleuro-pneumonia can remain seemingly dormant and incubating in the system before it becomes recognisably developed, is fallacious. Animals bred and reared on or in a place where there never had been any disease, nor to which any strange animals had been introduced, have developed the disease within less than ten days from their having been sent for sale to a public market, and brought back again from thence to such place, in consequence of not having been sold, although previously to such movement, and a day's exposure in the public market, they had not been in contact with any animals except such as had been bred on such place, and had not been even temporarily removed therefrom. It was not until subsequent to the year 1868, and only after a careful examination of all the ascertainable circumstances connected with some particular cases of Pleuro-pneumonia which had come under my observation in the county of Dublin, that I had satisfactory evidence of an animal becoming recognisably affected with Pleuro-pneumonia within ten days after its exposure to the infection of that malady. But, between July 1868 and April 1870, the latter date being the time at which the Pleuro-pneumonia Council Order was passed, many instances came under my own immediate observation of the disease having been brought from the Dublin Smithfield Market by and affecting an unsold cow, springer, or other bovine animal within ten days immediately after its return to premises on which the disease had never hitherto existed, and on which, during upwards of a year previously, no strange animal had been introduced, and from which no animal except the one in question had been even temporarily removed. It is therefore my duty, while now dealing with the subject, to report, as a result of my own observation and experience, that the virus, infection, or whatever may be a direct cause of Pleuro-pneumonia, when received into or first influencing the animal system, frequently has its effects developed sooner than within even so short a time as ten days immediately subsequent to the exposure of the animal to the infection or contagion of the malady; although it must be admitted that in the great majority of cases of Pleuro-pneumonia, resulting from infection or contagion, the

length of time which elapses from the exposure of the animal to the exciting causes of the malady, to the period at which it becomes recognisably affected, is considerably greater, sometimes extending over a lapse of even very many weeks.*

"The frequency of the failures of attempting to intentionally produce Pleuro-pneumonia in healthy cattle by experimentally exposing them to even prolonged contact with animals affected with that disease, should not be received as evidence of the malady not being infectious or contagious, the amount of evidence in favour of its being so being far too overwhelming to admit even of a reasonable doubt. It must, however, be admitted that Pleuro-pneumonia, when contagious or infectious in its character, is much less so than Foot-and-mouth Distemper: a fortunate characteristic, taking into consideration the greater per-centage of its mortality, as well as the obscurity of its symptoms in the early stages, which too frequently prevents its recognition being sufficiently timely for the efficacious adoption of isolation.

"It appears, from a comparison of the Irish Veterinary Department statistics relative to Pleuro-pneumonia, with the statistical returns relative to that disease in Great Britain, which are courteously forwarded each week by Dr. Williams, the Secretary of the English Veterinary Department, to the Irish Veterinary Department, that in the county of Norfolk alone there was a considerably greater number of certified reported outbreaks of cases of Pleuro-pneumonia during the twelve months ended 6th March, 1875, than there was in the whole of Ireland during the same period: the number of cases which occurred in Norfolk being 892, while the number of outbreaks which, according to the statistics in my possession, and on which, on the average, I have reason to rely, were reported and found to have actually occurred throughout the entire of Ireland, was 308.

"Although compulsory slaughter and compensation may, in the estimation of many, form a greater inducement in Great Britain to report cases of Pleuro-pneumonia as they occur, than exists in Ireland, on no reasonable grounds can it be concluded that such inducement, however great it may be, is sufficient to account for such a disparity between the number of cases reported as having occurred in Great Britain and in Ireland respectively, 7,018 in Great Britain and only 308 in Ireland. Neither are there reasonable grounds for believing that the Royal Irish Constabulary force, the non-professional machinery by which the Cattle Disease (Ireland) Acts, and the Council Orders passed thereunder, are principally carried out, are less successful than the police of Great

* With regard to the latent period in Contagious Pleuro-Pneumonia, we have made the following statement in Veterinary Sanitary Science and Police [vol. i., p. 421]: "The incubatory period of this disease is rather variable. In the larger number of instances, there is an interval of from three to six weeks, or two months, from the reception of the contagium to the primary manifestations of the affection. Exceptionally, it may only extend from eight to fourteen days, or from ten to sixteen weeks, and some observations would even go to prove that a period of nine to ten months may elapse before the disease shows itself. It must be remembered, however, that as inoculation cannot be resorted to with certainty (so far as the thoracic lesions are concerned) for the production of this lung affection, we have only casual observations to guide us in ascertaining the latent period."—Ed. *V. J.*

Britain in detecting and dealing with the occurrence of disease, the police force in Ireland being much more perfectly organised, and not subject to the varying discretion of local authorities, as are the police forces of Great Britain. The entire of the police force in Ireland is under the control of Government, and, in pursuance of the provisions of the Cattle Disease (Ireland) Acts, and of special Government Orders, its members are continually on the alert for the discovery or detection of non-reported outbreaks or cases of infectious or contagious animal diseases. Taking these points into consideration, it is unlikely that a much greater per-centage of non-reported cases of infectious or contagious cattle disease escapes detection in Ireland than in Great Britain, and it is quite impossible, under the circumstances, that such an almost immeasurably greater amount of cattle disease could exist in Ireland than in Great Britain, as is, although most erroneously, believed by the stock-holding classes of the latter country.

"So far from the herds of Ireland being at present, or having been of late years, in an unhealthy state, when compared with the general sanitary state of cattle in Great Britain, quite the contrary is the actual state of the case; a fact which has been ascertained by a careful and impartial investigation.

"A so much greater number of outbreaks and of cases of Pleuro-pneumonia occurring in Norfolk than in any other county in Great Britain, and the animals attacked being in the great majority of cases Irish, have naturally assisted in creating the impression so prevalent among English stock-feeders, that the affected animals must have brought the disease with them from infected herds in Ireland. But although the fact cannot be refuted that the animals attacked were principally Irish, yet, on the most careful investigation, even under the most favourable circumstances for obtaining information relative to their sanitary state, and all matters connected with them previous to their exportation from Ireland to Great Britain, no reasonable grounds could be discovered for even suspecting that they had been infected or exposed to infection previous to such exportation. It was therefore deemed desirable to carry the inquiries into Norfolk, with which view Mr. William Chambers, one of the inspecting staff belonging to the Irish Privy Council Veterinary Department, and who is intimately acquainted with agricultural pursuits, and the mode of dealing with diseased and other animals in Norfolk and other English counties, was, on the 12th of January, 1875, sent over to Norfolk to personally inquire and report upon the sanitary state of Irish animals when exposed for sale at the Norwich and other markets, and when subsequently being kept on the farms or premises of their purchasers. A copy of his report is annexed. Although replete with carefully collected facts, and, if viewed abstractedly, tending to confirm the opinion widely prevailing in England relative to the sanitary state of imported Irish cattle, yet a contrary conclusion appears inevitable if due weight is given to additional evidence procured not alone from other reliable sources, but also from his own subsequent report of the 19th March, 1875, a copy of which is also annexed, relative to the manner in which cattle are fed and kept in Norfolk, and if certain

well ascertained and generally admitted facts and recognised laws of nature are carefully considered. A consideration of the following extract from a communication of the 9th December, 1874, received from Messrs. Verdon and Cullen, of Liverpool, the most extensive Irish cattle salesmen or agents and importers in Great Britain, partly led to the decision to send an inspector from the Irish Veterinary Department to Norfolk to personally investigate into the matters to which it referred, so far as they related to that country :—

"'LIVERPOOL, 9th *December*, 1874.

"'In Norfolk the disease exists almost always, owing to the manner in which the animals are kept. They are put into covered boxes, and the "excreta" of the beasts is allowed to accumulate until the animals are brought out to market fat; sometimes this is two, three, four, six, eight, or even ten months. This, of course, is very unhealthy. The excreta kneaded into a consistency by the animals' feet is termed "bullock pudding," and is highly recommended as a manure by such men as Mr. Mechi, Lord Kimberley, and others. It is much better than uncovered farm-yard manure. But this result is attained at the cost of the health of the animals. A few years ago the cattle of this town were very much affected with lung disease. The usual hue-and-cry was made against Irish cattle. But the medical officer of health turned his attention to the facts. The cowhouses were cleansed and disinfected; no cattle were allowed to be kept within the borough, except with a license; and a guarantee that necessary sanitary precautions should be adopted. There are now licenses for 5,000 cattle within the borough, all healthy and all Irish; and, moreover, 200,000 Irish cattle pass annually through the borough, yet there are no cases of disease. These facts speak volumes for the health of Irish cattle.

"'(Signed) VERDON AND CULLEN.'

"On the 19th of March, 1875, Mr. William Chambers, in obedience to instructions, submitted a further report relative to the manner in which cattle were generally dealt with as fattening 'stores' in Norfolk, a copy of which is annexed. It would appear from this report, that in Norfolk it is the practice to put, as soon as possible, the store cattle intended for fattening into well littered and sheltered yards, covered stalls or boxes, constructed often by being fitted and having their ground surfaces and sides particularly adapted for the purpose, so as intentionally to prevent any drainage, and thus to retain even the urinary, along with the other excretations of the animals confined therein, and that, as Mr. Chambers describes :—

"'During the stall-feeding season, which continues about seven or eight months, the manure from the yards, stalls, or boxes, is not, as a rule, moved more than once, that is, when the farmer requires it for the wheat crop, about the latter part of October or the beginning of November; and again, in the following spring, for the root crops, after the cattle are disposed of; and that, during such length of time of the cattle being so circumstanced and being fattened, the feeding troughs have to be raised

by chains and hoops, according to the height to which the manure accumulates.'

"As well might human beings imprisoned for months together in cess-pits or cesspools, or in reservoirs for the accumulation of their fæcal, urinal, and other secretions, standing or lying continuously on such accumulations of their own excrements, constantly inhaling the pestilential emanations from their own ordure, fresh as well as stale, or in a state of fermentation or decomposition, be expected to continue, or be in such a vigorous state of health as not alone to resist diseases, but also to increase in healthiness and flesh, as that it could be reasonably expected that cattle, treated as they are in Norfolk, no matter from whence they come, could invariably remain in a sound or healthy state; not even the proverbial hardiness of Irish cattle can always successfully resist such disease-engendering or exciting influences. It is much to be regretted that legislation, based upon the recognised principles of sanitary science, has not as yet, in the interest of the public welfare, extended to food-producing domesticated animals the same degree of sanitary protection as is already enjoyed by the human population of Great Britain; and I have the honour to most respectfully submit that, until such is the case, it would be unreasonable to hope or trust that the occurrence of Pleuro-pneumonia in Great Britain, particularly in the county of Norfolk, will be diminished to an extreme minimum.

"As to the prospects of contagious or infectious bovine Pleuro-pneumonia being thoroughly stamped out of or eradicated from Great Britain, I regard it as quite an impossibility as long as—what is an absolutely imperial and national necessity—the importation of cattle from abroad continues. Under existing circumstances, the most that can be done is to diminish the evil.

"It has been too much the habit to treat the important subject to which this report relates in a sensational manner, particularly by certain sections of the English and Scotch agricultural press and chambers; but, if prejudice be set aside, and all the circumstances of the question involved dispassionately and impartially investigated, the result of such investigation cannot be otherwise than immeasurably in favour of the sanitary state of agricultural live stock in Ireland, when compared with that of British stock of the same kind, particularly in the county of Norfolk.

"Mr. Chambers, at the conclusion of his report of the 19th of March, 1875, referred to the fact that the second lots of cattle which are purchased during the year in Norfolk, almost invariably do well, and scarcely ever suffer from disease. As Mr. Chambers observes, the practice is to feed these cattle with turnips, thrown about the stubbles, until the weather becomes severe, when they are placed in littered yards, and kept upon refuse roots, hay, and barley straw, until the end of April, then pastured, during the summer, on marsh lands, for the next season's stall feeding. The fact that the Irish store cattle thus treated rarely become diseased, must be regarded as strong evidence against the allegation that lung-distempered Irish cattle, in Norfolk, bring the malady with them from Ireland, and in favour of their having contracted it in consequence

of the disease-developing influences to which they are there subjected, and which are inseparable from the present system of indoor cattle feeding in Norfolk, by which the functional and organic health of the animal is so frequently impaired, or even fatally sacrificed, to an increase in the quantity, and an improvement in the fertilising properties, of its manure products."

DISEASES AT THE CAPE OF GOOD HOPE.

FROM a non-professional correspondent, we learn something of the diseases prevalent among animals at the Cape of Good Hope. He writes: There is the "lung sickness" (contagious pleuro-pneumonia), for which the colonists inoculate in the tail. They say, if the disease is allowed to go on without inoculation being attempted, they lose seventy-five per cent.; if they inoculate, they only lose fifty per cent. They also use chlorate of potash, and it finds favour. This disease is infectious. There is "hoof-sickness" from damp pastures, and "geel sickte" (or scabies), or throat disease; "brand sickte," which causes the coat to stare, and then to fall off like the mange; "snort sickte," or disease in the nostrils. Cattle also suffer from being removed from sweet to sour pasturage. There is the "tsetse," or poisonous cattle fly, which kills in from one to six weeks. There is also periodical "horse-sickness," beginning in the later months of the year—say from September or November—and lasting three or four months; but if a horse recovers from this, he is not liable to it again, unless he goes from a mild district to a worse one. A "salted horse," *i.e.*, one that has had the disease, is very much enhanced in price among the hunters.

TRANSMISSION OF TINEA TONSURANS.

WE have recently had under treatment a dog suffering from transmitted *Tinea tonsurans* (ringworm). The malady appeared as a patch on the right side of the head, towards the ear, more than two inches in diameter, and there could be no mistake as to its character. It was, in fact, one of the best-marked cases we have met with for some time, and it proved far more obstinate to cure than is usually observed: thus conflicting with an opinion we have elsewhere given, to the effect that the spores of ringworm, when transmitted to the dog from another species of animal, lose their vitality in a short time. In this instance they were remarkably tenacious of life, and it required repeated dressings with tincture of iodine and glacial acetic acid, alternately, to destroy them. The dog, which was a smooth-haired terrier, had been kept in a stable where a number of horses were suffering from the disease, which chanced to be introduced by a newly-purchased young horse.

Annals of Veterinary Science.

ANATOMY AND PHYSIOLOGY.

THE STOMACH OF THE CAMEL.

MR. GARROD.

(*Nature*, June 3rd, 1875.)

THE abnormal conformation of the gastric section of the alimentary canal in the camels has attracted the attention of many naturalists. In the llamas the same structure maintains. As in the typical ruminants, the stomach is composed of several cavities communicating one with the other, but there is some difficulty in deciding which are the exact homologues of the *rumen*, *reticulum*, *psalterium*, and *abomasum*. The first cavity is a capacious globose sac, into which the œsophagus opens. A longitudinal band of muscular fibres partly constricts it, in its course from the right side of the cardiac orifice backwards along the ventral surface, opposite the middle of which a narrow and long aggregation of "water cells" starts to continue transversely towards the left side of the organ. This longitudinal muscular band forms one of the boundaries—the left one—of a much larger collection of deeper water-cells, which embrace the posterior portion of the right side of the paunch in the concavity of their crescentic mass. From the right of this first main compartment a second smaller one is cut off by a constriction which leaves a considerable opening between the two. Its position is that of the reticulum; it is deeply honeycombed, the lining membrane of the cells being covered with villi much like those on the surface of the folds of the psalterium of the deer, etc. The cell-walls are thin, and but slightly muscular. In the paunch the mucous membrane is smooth and not at all thick. The water-cells are formed on a framework of many intersecting muscular sheets arranged in layers, with intervals of less than an inch between them, one half being at right angles to the other, so as to form rows of quadrilateral cavities. These are again incompletely divided up by secondary septa. The orifices of the cells are partly closed by diaphragm-like membranes at their mouths. Most probably the contraction of the aggregated muscular fibres in the same situations is capable of closing the cells completely when necessary. That the camel can store fluid in these water-cells is borne out by the experience of so many authors, that doubt is scarcely possible. For instance, in his "Travels to discover the Sources of the Nile," Bruce (vol. iv., p. 596) tells us on one occasion, that "finding the camels would not rise, we killed two of them; .... and from the stomach of each we got about four gallons of water, which the Bischareen Arab managed with great dexterity." As John Hunter remarks, there is no physiological reason why this should not be the case. A specialised structure is observed by zoologists; a special power is attributed by travellers; the function and the structure may be reasonably correlated: why should they not be so, as no other explanation suggests itself? There is no arrangement for closing the cells of the reticulum, similar to that found in those of the rumen.

A muscular fold runs from the termination of the œsophagus, along the superior or vertebral side of the lesser curvature of the stomach, to the third compartment, which evidently directs the products of rumination into it, just as the two folds of the same region do which traverse the reticulum in the typical Peccora. Following the honeycomb bag is a single elongate cylin-

drical cavity, which dilates slightly, and becomes bent at its pyloric extremity. This compartment is thin-walled and longitudinally ribbed, internally, for its proximal five-sixths, beyond which the mucous membrane is much thickened, and evidently digestive in character, especially in the neighbourhood of the angle of the inflection in that region. This section of the stomach apparently corresponds to the abomasum, the psalterium being absent. In the Bactrian camel there is a partial constriction in it, which partitions off a small proximal cavity, which may be its homologue.

In the corpuscles of the blood, the Tylopoda are unique among Mammalia, these minute discs being oval instead of, as in all other members of the class, circular.

INFLUENCE OF SEASON ON THE SKIN OF FŒTAL ANIMALS.

BY DONHOFF.

(*Reichert und Dubois Reymond's Archiv*, i., 1875. *Academy*, June.)

DONHOFF calls attention to the fact, that the obvious difference between the fur of animals in summer and in winter is associated with an equally striking difference in the texture and thickness of their skin. Thus, for example, the average weight of an ox-hide in winter is seventy pounds; in summer, fifty-five pounds: the hair in winter weighs about two pounds; in summer, about one pound; leaving fourteen pounds to be accounted for by the proper substance of the skin. These differences are quite as decided in fœtal animals as in adults. Calves born in winter have a longer and thicker coat than those born in summer; moreover, there is a difference of more than a pound in the weight of their skins after the hair has been removed. Similar facts may be observed in the case of goats and lambs. That these differences are not to be ascribed to any corresponding change in the diet and regimen of the parent animals, is proved by the fact that they are equally manifest in the young of individuals kept under cover and on the same food all the year round.

THE POSITION OF THE NERVOUS CENTRE.

(*The Lancet.*)

THE position of the nervous centre, from which proceed the nerves supplying the vessels of the body generally, and which must necessarily exert a very powerful influence over the functional activity of all the glandular organs, and, in fact, over the nutrition of the whole body, has been the subject of much recent investigation. Presjannikoco has shown that this vaso-motor, or, as it is sometimes termed, pressorial, centre is situated in the medulla oblongata, and that in the rabbit its upper limit is about 1-2 mm. distant from the corpora quadrigemina, whilst its lower limit is about 4-5 mm. above the calamus scriptorius. When this region is irritated, the arteries throughout the body contract, whilst when it is destroyed they remain persistently dilated. So long as it and the communications remain intact, irritation of any sensory nerve causes increase of blood-pressure by contraction of the arteries, which is effected by reflex action; whilst, on the contrary, when destroyed, but little effect of this kind can be produced. Even when destroyed, however, direct irritation of the spinal cord as low down as the eleventh dorsal vertebra, will still excite extensive local vascular contraction, with increase of pressure. This, however, furnishes no evidence of the existence of a centre, but only shows that the fibres proceeding from the centre descend through the cord.

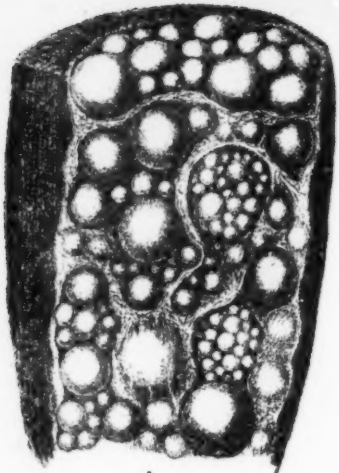
Goltz has indeed shown, in a mode that admits little opening for question

that a vaso-motor centre for the vessels of the generative organs exists at the lower part of the spinal cord. Still, the general impression is that the principal vaso-motor centre occupies the region above stated, on the ground that, if a section be made above the medulla oblongata, irritation of the sensory nerves is capable of greatly increasing the blood-pressure—in fact, to as great an extent as in the medulla. No irritation of sensory nerves will produce this effect.

Dr. Moritz Nüssbaum, at Pflüger's suggestion, and at the laboratory of this physiologist at Bonn, has undertaken a series of investigations to determine whether the chief vaso-motor centre does or does not extend down the spinal cord. His experiments seem to have been made upon the frog, and the web of the foot was the part in which the variations in size of the vessels were measured. Dr. Nüssbaum observed that if the spinal cord were divided opposite the atlas with great care, and with the loss of very little blood, which may be accomplished by the application of a galvano-caustic wire, the first effect is great constriction of the vessels throughout the body, caused by irritation of the vaso-motor nerves, giving place, in the course of about five minutes, to great dilatation, consequent on the paralysis, which persists for the space of about two hours. He further noticed that the usual rhythmical contractions of the arteries reappeared, presenting the same characters as those that have been described by Schriff, Saviotti, Meigel, and others. The occurrence of these contractions he rightly regarded as furnishing a strong evidence that a centre exists in the spinal cord, from which pulses of nervous force emanate at tolerably regular intervals. Nüssbaum further found, contrary to the observations of his predecessors, who, he thinks, have been too hasty in drawing their conclusions, that when the animal has thoroughly recovered from the shock of the operation, irritation of sensory nerves, whether by mechanical, chemical, or electrical stimuli, induced contraction of the arterial walls in extensive districts of the body, though if the whole nervous system were removed, no such contraction could be produced during the twenty-four hours that the animal usually lived, the arteries constantly remaining widely dilated. He maintains that no mistake of observation could exist upon the point, the reflectorially excited contraction occurring between five and fifteen seconds after the application of the stimulus to the sensory nerve, and reducing the calibre of the vessels to one-third or one-fourth of their normal size; whilst when the cord was entirely removed, no action whatever was discoverable. The experiment answered, even when the cord was divided at the lower part of the neck, below the origin of the brachial plexus. It is thus certain, he maintains, that the spinal cord, like the medulla oblongata, is an independent vaso-motor centre, and that, consequently, the medulla oblongata only contains the upper extremity of this centre. However true this may be for the frog,—in which the special functions that in higher animals are localised in the brain are so much more generalised,—it must be remembered that Goltz's experiments on the rabbit, and those of Dittmar, Ludwig, and Thiery on the dog, were very precise.

Dr. Nüssbaum adds a note of separate interest, to the effect that he has learnt from incidental observations that vaso-motor nerve-fibres run in the sciatic nerve of the frog, though Dogiel had come to the conclusion that there were none in the dog. He also discusses the question of the existence of the active dilatation of vessels—such active dilatation as is seen in the vessels of the submaxillary gland on irritating the chorda-tympani, and in the penis on irritating the nervi erigentis; and suggests as a possibility that such cases may be explained by the irritation having for its consequence the contraction of the arterial system generally, so that the pressure is everywhere increased, but the vessels of the gland and penis respectively, being less able to resist, yield to it, and thus an apparent dilatation is effected.

Plate 1



A

Fig 1
3

Fig 3
42

Fig 4
200

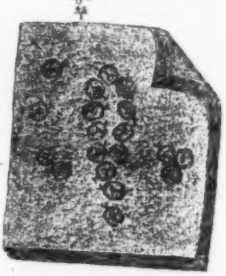


Fig 2
24

Fig 5.
250

Fig 6
220

Fig 7
10

Fig 8
200

Fig 9
200

Exogenous Echinococcus

PATHOLOGY AND MORBID ANATOMY.

ECHINOCOCCUS DISEASE IN A HORSE.

(*Bulletin de la Soc. Centrale de Méd. Vétérinaire.*)

At an ordinary meeting of the Central Veterinary Medical Society held in April last, M. Broquet brought forward the case of an omnibus horse in Paris, which had been suffering from the effects of a punctured wound in the foot produced by a nail accidentally picked up in the street (*clou de rue*); and in the crural region of this animal a number of *Echinococci* were found. M. Mégnin completed the history of this case by exhibiting a bottle (demi-litre) filled with hydatids—nearly a fourth of the number contained in the muscles on the inner aspect of the thigh of the said horse. He also exhibited a coloured drawing representing a portion of the short adductor of the thigh (see annexed plate—A), the interior of which was completely destroyed, and its place occupied by an immense multilocular kyst, or rather a great number of contiguous kysts of various sizes, separated from each other by a yellow friable connective tissue, though communicating generally; these contained a great quantity of hydatids, whose volume varied from that of a grain of millet to that of a pigeon's egg. He also showed another drawing representing (fig. 1) a hydatid in process of proliferation by external buds (*exogenous* variety); a portion of the hydatic membrane (fig. 2), with its inner surface lined by the germinal membrane, to which there adhered by a short pedicle twenty-four *scolices* or heads of tæniæ (*Echinococci* of Rudolphi), magnified 45 diameters; also one of these magnified 265 diameters (fig. 3); likewise the same scolex pressed in such a manner as to show the suckers which, as well as the coronet of hooks, are invaginated, and only become external in the adult animal (fig. 4); two specimens of the hooks from the double crown (fig. 5); one of the calcareous corpuscles disseminated in the parenchyma of the scolex magnified 725 diameters (fig. 6); and a section of the hydatic membrane (fig. 7), exhibiting the numerous layers of which it is composed, and which are closely united, though still readily separated into three principal layers.

Pallas was the first, in 1766-67, to recognise in the hydatids a parasite endowed with independent vitality; as before his time only the kysts were noticed.

Gœze, in 1782, confirmed the opinion given by Pallas. He writes: "The kysts in the liver of the sheep having been opened, there issued from the interior callous, bluish vesicles, more dense than those of the glomerated vesicular worms (cysticerci or cœnuræ); on opening them there were found in several places a greyish-white granular matter like the most minute ova of fish; this was combined with a very delicate mucous membrane. When I used No. 1 (lens), I could distinctly perceive that these were true tæniæ."*

The mucous membrane is that which Davaine has designated the "germinal membrane," and the granules alluded to by Gœze are the scolices of the Echinococcus.

The "Singular hydatids," the name given to them by Pallas, became the *Tænia socialis* of Gœze, and at a later period the *Echinococcus* of Rudolphi.

Laennec, Himly, and other observers having met, in the human species, with hydatids without the tape-worm heads, considered these as another kind than the Echinococcus, and designated them *Acephalocysts*. Livois, a pupil of Rayer, in his inaugural thesis demonstrated that hydatids without the

* *J. A. Gœze.* Versuch einer Naturgeschichte, etc., 1782, pp. 258, 264.

Echinococci did not exist, and that the genera *Acephalocysts* should be suppressed. Davaine has since proved that these latter exist, but that they are nothing more than the Echinococcus hydatids, the germinal membrane of which has decayed.

The hydatids, before the appearance of the germinal membrane, proliferate in two ways, which have been perfectly described by Kuhn, who, on this ground, has divided them into two distinct species or varieties : the hydatid which buds externally, the *exogenous hydatid;* and that which buds internally, the *endogenous hydatid.*

The *endogenous hydatids* acquire a much more considerable volume than the exogenous ones. The latter are solitary in the same vesicle, and scarcely ever exceed a pigeon's egg in size ; the former may become as large as the head of a full-grown human fœtus, and contain a great number of vesicles imbedded one within the other.

The *exogenous hydatids*, according to Davaine, are met with in ruminants, and the *endogenous* in man, the monkey, pig, and horse. Nevertheless, either because there is no specific difference between the two kinds of hydatids, or because each kind is not the exclusive property of certain animals, there are sometimes found, though rarely, *endogenous* hydatids in ruminants, and *exogenous* hydatids—at least those solitary in a vesicle—in man.

That described by Mégnin belonged to the exogenous variety.

The *Echinococci* are very closely related to the *Cœnurus* and *Cysticercus;* and, like these, they are in a transition state, being the real larvæ of certain species of Tæniæ. They are distinguished from the *Cœnurus* by the latter having a much thinner envelope, and by the scolices or heads, which really adhere to the external surface ; they also exclusively infest the cerebro-spinal organs. They likewise differ from the *Cysticerci* in the latter having only one head.

The experiments of Siebold and Van Beneden have proved that the *Echinococcus* of the sheep and ox, named by Rudolphi *Echinococcus veterinorum*, is the larva of a small tapeworm which does not exceed two millimetres in length, has only three segments, and is sometimes found in great numbers in the intestines of the dog, and even in those of man : this is the *Tænia nana* of Bilharz.

Mégnin remarks that it would be interesting to learn if the exogenous Echinococcus of the horse referred to by him, belongs to the same tapeworm ; and in order to arrive at a conclusion in this respect, he had sent some of the specimens to Professor Baillet, of the Alfort school, to be experimented with ; dogs which had been fed with them had commenced to pass the proglottides, and the result was looked forward to with much interest.

Echinococci have been met with in the liver, spleen, omentum, intestinal tunics, and pelvis of man ; as well as in the superficial parts of the head, neck, trunk, limbs, and even in the bones.

So far as animals are concerned, ruminants have them most frequently and in largest numbers, chiefly in the liver and lungs, but also in the bones of the ilium ; they are likewise found in the kidneys of the sheep. Duprey relates the case of a pig, two years old, which had hydatid kysts in several muscles of the loins, back, and thigh, and in the lungs, liver, and kidneys ; some of these only contained one hydatid, others several. Rudolphi, Chabert, Abilgaard, Girard, and Cartwright, have also observed them in the pig.

Only one case of the disease in the horse is reported by Davaine, as communicated to him by Gobaux ; the kyst contained an immense number of hydatids, and was situated between the thoracic parietes and the attachment of the diaphragm.

In concluding his remarks on the curious case which he had brought forward, Mégnin alludes to its etiology. It appears that the horse was watered

every day with the unfiltered water from the Seine; it is, therefore, not at all unlikely that the ova of the *Tænia* which it ingested—ova which are not more than two to three millimetres in diameter—were contained in the water it consumed, and were derived from some dog excreta dissolved in the gutter and washed into the river; unless it had swallowed them in its forage, which might easily have been soiled in this way.

It also appeared to be certain that the great development of this invasion of *Echinococci* took place while the horse was in the infirmary,—during the last months of its life, in fact; for it was impossible that muscles altered so much as they were in this instance—they being nearly destroyed by the extraordinary multiplication of the parasites in their interior—could act without betraying their condition during movement; no irregularity in the animal's paces was observed until the day of its entrance into the infirmary, and this lameness may have been masked by that produced through the punctured wound of the foot.

ARTIFICIAL PRODUCTION OF CANCER.

BY DR. CREIGHTON.

(*Reports of the Medical Officer of the Privy Council for* 1874, p. 96.)

In making a systematic investigation of points in the histogenesis and causation of malignant tumours, it was obvious at the outset that the investigation would be facilitated very much if such tumours could be produced artificially. Not only would the channels of infection, and perhaps the agents of infection, be discovered, but the disease itself, the product of infection, might be obtained at the various stages of its development, and, to speak generally, under conditions that could be varied to suit the requirements of the research. Attempts were therefore made to propagate cancerous tumours artificially, by means of the injection of the cancerous juices, and by the grafting of portions of tumours among the tissues of an animal. Previous experimenters having failed in the attempt to graft portions of cancerous tumours from the human subject on dogs, occasion was taken to graft from one dog to another, and, in the case of a mammary tumour in the cat, from that animal to another of the same species. The experiments in dogs failed in several cases, from the difficulty in retaining the graft in the animal designed for infection. In two cases, however, thin slices of the granulating surface of mammary tumours were applied to previously prepared granulating surfaces of the subcutaneous tissue in other dogs, and successfully retained by stitching the skin over them. In both cases no growth at the point of grafting took place, but a thickening under the cicatrix, corresponding to the size of the graft introduced, could be felt for some weeks after. A dissection was not made of these cases; but there is no doubt that the grafts, as in former experiments where portions of tumours of the human subject were grafted on animals, became surrounded by a fibrous investment, as if they had been foreign bodies and incapable of being incorporated with the surrounding tissues. The injection of the cancer juice under the skin was tried in several cases without effect. Both in these and in the grafting experiments, care was taken that no interval should elapse between the removal of the tumour and the commencement of the experiment, so that the tumour elements used for inoculation presumably retained their vitality. These experiments were very limited in number, for the case of the inoculation of tubercle appeared not to be an analogous case; and beyond the supposed analogy of tubercle, there was nothing to indicate the conditions under which cancer might be produced.

SURGERY.

REMOVAL OF A SUPPLEMENTARY LIMB UNDER CHLOROFORM.

BY JOHN G. BRADEN.

(*The Lancet*, July 24th.)

MR. J. G. BRADEN, of Lewes, writes to the *Lancet* as follows :—

"A successful piece of equine surgery, having some interest for members of our ranks, may be worthy of record in your journal.

"The subject of this notice is a foal of the cart breed, born near this town. He had a rudimentary fifth leg growing from the middle third of the metacarpal bone of the off fore-leg, reaching nearly to the ground. The upper part of the rudimentary leg was an expansion of the true 'cannon' bone; at the fetlock joint it possessed a separate articulation, having long and short pastern bones, also a hoof, the whole being about nine inches in length.

"This *lusus naturæ* was a patient of my friend, Mr. R. A. Stock, Veterinary Surgeon, of this town, whose opinion was sought as to the advisability of amputation. His opinion, and one in which I coincided, was that there was a fair chance of success in the operation.

"On June 4th, the foal then being five weeks old, a fine, healthy, well-developed, and powerful animal, was placed by me under the influence of chloroform, and Mr. Stock commenced operating by making a long incision nearly the whole length of the small leg; the integuments were thrown back, exposing the whole abnormal growth. The knife was then passed through the joint, two sesamoid bones were dissected out, and a protuberance of the true cannon bone was sawn off with a small bow-saw from below upwards. Several vessels required tying; the integuments were brought together with wire sutures, and the whole of the lower part of the limb was enveloped in a wet bandage. About three ounces of chloroform were required, which nearly proved fatal. Cold water thrown over the head, and friction applied to the body, however, speedily restored animation.

"Since the operation not a single bad symptom has supervened, the after-treatment consisting of the application of cold water and carbolic-acid lotion. When the sutures sloughed away, the parts were kept in place by bandaging. Four weeks after the operation the wound had quite healed, and the little animal is now as lively as possible, without lameness or stiffness of the fetlock joint.

"The point of interest about the case is the apparent impunity with which cold steel can be made acquainted with the joint of an animal, both in the form of scalpel and saw, and the reflection is whether individuals of our own species of the same tender age could go through the same operation with the like impunity."

CÆSARIAN OPERATION ON A COW.

THE *Scalpel*, a Belgian medical journal, announces that a veterinary surgeon, named Lehnert, has performed the Cæsarian operation on a pregnant cow which was affected with pulmonary phthisis in an advanced stage. The operation was completely successful, in so far that three calves were safely removed in good health, and were afterwards reared without any trouble.

RUPTURE OF AN ANEURISM OF THE LEFT PULMONARY ARTERY.

BY HARTMANN.

(*Œsterreiche Vierteljahresschrift f. w. Thierheilkunde.*)

HARTMANN relates, in the first number of this journal for 1874, a clinical case of the rarest kind: that of an Aneurism of the left pulmonary artery, situated in the lower third of the corresponding lung, which had become impermeable to the air at that part. The rupture of this aneurism was the cause of a fatal hæmorrhage. At the autopsy, on a careful examination of the heart, lesions peculiar to fatty degeneration were discovered in the texture of that organ.

The animal which was the subject of the disease was a foal (male), aged one year; and from the time it was parted from its dam it had been constantly unwell. Notwithstanding its good appetite, it never became fat, and the abdomen was always retracted. On two occasions it had exhibited symptoms of pneumonia on the left side, with moderate febrile reaction.

On August 9th, after remaining for a certain period in a corner of the stable without paying any heed to what was going on around it, the foal was all at once seized with a fit of coughing, accompanied by so severe an attack of hæmoptysis that the blood streamed from mouth and nostrils at the same time. During the most violent coughing, voluminous clots of blood were expelled by the mouth—a very unusual occurrence. While the fits of coughing lasted, as well as during their access, blood flowed from the nostrils continually, and in great quantity.

Hartmann appears to have been rather baffled by the symptoms, but he pronounced it to be a case of Pneumorrhagia due to some unknown cause. On percussion of the left side a dead sound was elicited; the pulse was small and filiform; the heart's pulsations were scarcely perceptible; and the animal exhibited symptoms of dyspnœa.

With the greatest difficulty the patient was removed to the infirmary, only half a league distant from the place where it was standing when the first morbid symptoms appeared; and the fits of coughing, as well as the hæmorrhage, persisted with the same violence during the whole of the journey. On arriving at the infirmary, the poor creature stood with its fore-limbs apart; its body was covered with a cold perspiration; the buccal mucous membrane and the extremities were cold; the respiratory murmur was very faint at the upper part of the left side of the chest, but was completely absent below and behind on the same side, where percussion yielded a dull or dead sound. The pulse was small, filiform, and almost imperceptible; the sounds of the heart were scarcely audible; the fits of coughing were violent and continuous, as well as the discharge of blood from the nostrils and mouth, until death ensued, which was soon after its arrival at the infirmary.

At the necropsy, on opening the thorax, Hartmann noted the existence of a slightly prominent resisting tumour, paler than the tissues in its vicinity, and situated towards the middle of the lower third of the left lung. This tumour was about the size of a goose's egg. On cutting into it, no crepitating sound was heard, and it was remarked that the thickness of the wall of the tumour was about half an inch. It was also observed that there was a uniform dilatation of the pulmonary artery, measuring three inches wide and four long; the interior of this dilatation was formed by a yellow, fibrinous, hard, fibrillous, and stratified clot, adhering to the lower wall of the vessel. The parietes of the aneurism were covered with fibrine, which could be removed in longitudinal flakes.

Towards the superior orifice of the aneurism was found a perforation which would easily admit the ends of two fingers, and formed a means of communi-

cation between the vessel and one of the bronchi. A cylinder of fibrine passed across this communicating orifice.

The tissue of the posterior lobe of the lung was dense, and no longer crepitant; the bronchi of this part were dilated. The heart was of a pale red colour, streaked with yellow; the organ was flabby as well as friable.

SUBCUTANEOUS OPERATION FOR STRANGULATED INGUINAL HERNIA IN A STALLION.

BY SIEGER.

(*Wochenschrift für Thierheilkunde.*)

CALLED in to attend upon a stallion, twelve years old, suffering from strangulated Inguinal Hernia, Sieger operated in the following manner, as described by him in the *Wochenschrift* for 1874:—"Fixing the horse on its back in the usual way, an incision was made through the skin, along the base of the scrotum, for about one and a-half to two inches, and opposite the external opening of the inguinal canal; then the dartos, fibrous tunic, and the cremaster were gradually cut through. The index finger of the left hand being introduced as far as the point of obstruction, a button bistoury was carefully passed up to the latter, and divided the inguinal ring. The reduction of the hernial viscera was accomplished without any difficulty. The wound was closed by some points of suture, after some tow had been introduced. On the twelfth day the cure was complete, and the horse was sent to its ordinary duties, without showing any subsequent ill effects of the accident or the operation." The advantages of Sieger's method are the simplicity of the operation, the prevention of contact of the air with the greater portion of the hernial viscera, but principally the preservation of the testicles.

TREATMENT OF ULCERATION IN THE EARS OF THE DOG.

BY COCULET.

(*Recueil de Méd. Vétérinaire.*)

THE disease vulgarly known as 'canker' in the dog is frequently most troublesome and unsatisfactory to treat, for several reasons. In the *Recueil de Méd. Vétérinaire*, Coculet recommends, as a very successful method of dealing with these auricular chancres, the application of some blistering ointment or liquid over the external surface of the ear. The preparation he employed was tincture of cantharides, forty-five grammes; tincture of oak galls, ten grammes. This was applied once every two days, and by its influence the intolerable itching which accompanies the disease was allayed, and a smart but inconvenient pain substituted. The animal no longer shakes its head nor scratches the ears with its paws, and the chancre soon disappears.

MATERIA MEDICA, THERAPEUTICS, AND CHEMISTRY.

SUBCUTANEOUS INJECTION OF MORPHIA FOR LARYNGEAL CATARRH IN THE DOG.

BY HARMS.

(*Œsterreichische Vierteljahresschrift*, 1873.)

HARMS injected 0·07 grammes of morphine hydrochlorate, in solution, beneath the skin of a dog which had been suffering from a dry laryngeal cough for

four weeks. For two hours after the injection, the animal exhibited every symptom of complete narcotism, with total loss of consciousness and sensibility. In the course of eight hours it manifested sensibility when pricked with a pin, and could raise itself on its fore limbs. In twenty-four hours it was able to stagger into its kennel, but it had no appetite. In two days and a half it was as lively as before the injection; and until it left the hospital, a week afterwards, the cough had not returned.

SACCHARATE OF CALCIUM AS AN ANTIDOTE IN CARBOLIC ACID POISONING.

BY KUNDE.

(*Gazetta Medico-Veterinaria*, 1874.)

POISONING with carbolic acid, either through its administration by the mouth in an immoderate dose, through its absorption by the skin, or by inspiration, is not very unfrequent, and a certain antidote has not yet been found. The best yet proposed, according to Kunde, is castor oil, with some stimulant aromatic substance, and the saccharate of calcium prepared as follows:—

Water	. . . .	50 grammes.
Sugar	. . . .	15 „
Slaked lime	. . . .	5 „

To be mixed, and shaken every half-hour for some time.

Abstract of the Proceedings of Veterinary Medical Societies, etc.

ROYAL AGRICULTURAL SOCIETY.

AT the monthly Council Meeting of the Royal Agricultural Society, on August 4th, Mr. Whitehead, chairman of the Veterinary Committee, reported that the Committee moved for a grant of £25, for the purpose of testing a system of alleged cure for Pleuro-pneumonia. The Committee had considered a letter from the clerk to the Committee of the Brown Institution, in which it was stated that that Committee would undertake to carry out the object of the Society, and suggesting a conference with the Veterinary Committee, with a view to an arrangement being carried out for that purpose. The Committee recommended that this proposal be adopted, and that the Committee of the Brown Institution be asked to draw up in detail a draft of their scheme, so that it may be circulated amongst the members of both Committees for their consideration prior to the next Council Meeting, which was fixed for November 2nd.

"There seems," says *Bell's Life*, "to be a good prospect of some valuable knowledge being gained by the position which the Royal Agricultural Society is now taking; and the modest request for £25, which will not go very far, we should suppose, in investigating thoroughly the causes and treatment of so formidable a disease as Pleuro-pneumonia, will no doubt be a commencement of a series of grants which will be applied towards the complete study of all the less understood diseases of our farm animals."

THE LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

THE Annual Meeting of this Association was held on Friday, the 13th August, in the Medical Institute, Hope Street. Mr. George Morgan, President of

the Association, occupied the chair. Amongst the gentlemen present were: Mr. R. Reynolds, G. Hayes, J. Welsby, W. Leather, W. A. Wilson, D. Hutcheon, C. W. Elam, J. Ackroyd, Thos. Harwood, and W. C. Lawson, Liverpool; W. A. Taylor, President of the Lancashire Veterinary Medical Association; Thos. Greaves, President of the Midland Counties Veterinary Medical Association; M. Murphy, Principal of the Liverpool College of Chemistry; Jas. Freeman, Hull; W. Dobie, Birkenhead; H. Barnes, Malpas; D. M. Storrar, Chester; and John Lawson, Alex. Lawson, T. Hopkins, E. Woolner, and E. Faulkner, Manchester; W. Woods, Wigan; W. A. Cartwright, Whitechurch; P. Rothwell, Bury.

Letters or telegrams of apology were received from Col. Sir. F. Fitzwygram, Bart.; Professors Simonds, McCall, and Williams; Geo. Fleming, Esq., F.R.G.S., Royal Engineers; C. Steel, Esq., 12th Lancers; J. Anderton, Skipton; Peter and Thomas Taylor, Manchester; W. Whittle, Worsley; W. Lewis, Crewe; J. Gerrard, Market Deeping; R. Reynolds, Mansfield; W. Litt, Shrewsbury; B. Kettle, Market Drayton; H. J. Cartwright, Woolverhampton; H. Slack, Esq., M.D., and Thos. G. Proctor, Liverpool.

The minutes of the last quarterly meeting having been read, the chairman called upon Professor Walley, principal of the Edinburgh Veterinary College, to read his paper on "The Differentiation in the Symptoms and Characters of Intestinal Affections." The paper was listened to by the various members present with great interest, and was followed by a very profitable discussion, in which a number of most useful hints were thrown out, and facts elicited regarding diagnostic symptoms, that cannot fail to be of service in after life to all those who had the pleasure of listening to them. A vote of thanks was accorded to Professor Walley for his exhaustive paper, and the hope was expressed that it might be printed in a pamphlet form.

The members of the society afterwards dined at the Adelphi Hotel, under the presidency of Mr. Morgan, Mr. Welsby being in the vice-chair. After an excellent dinner had been partaken of, the chairman proposed the loyal and patriotic toasts, after which Mr. R. S. Reynolds proposed "The Royal College of Veterinary Surgeons," which was responded to by Mr. John Lawson. Mr. W. A. Taylor proposed "The Veterinary Schools," which, he said, had risen from the time they were established, and he believed would ever rise, in the estimation of the public. When they had such men as Professors Simonds, Walley, and Williams as the heads of their colleges, he feared nought that might be said in opposition to the advance of veterinary science. (Hear, hear.) To the young members of the profession he said that its advancement depended to a very great extent on the manner in which they conducted themselves.

Professor Walley, in responding, said be knew, from what had been done in the past at the London College, nothing would be left undone that Professor Simonds could do to forward veterinary science, and he could say the same on the part of the Edinburgh College. He might not agree with Professor Simonds in the course he was taking, because he thought it a great mistake for him to obtain the charter he had got for the London College alone; inasmuch as it ought to have been obtained for the Royal College, so as to make it applicable to all the schools. (Hear, hear.) Professor Walley then gave the toast of "The Liverpool Veterinary Medical Association." He did so with all the more pleasure because he had been at one time a member of the association himself. At their meetings he had gained many valuable hints and lessons which had served him well in years gone by. During his experience of the society, many valuable discussions took place—in fact, as valuable discussions as he had ever heard in any veterinary medical association in the kingdom. As to the utility of these associations,

there was no organisation in the profession which could do more good than associations of this kind, providing they were always used for their proper purpose. They should only be used for the advancement of the profession and the healing and prevention of disease, and not for anything like party purposes. It was with great pleasure he coupled with the toast the name of Mr. Morgan, their president, and long might he live to be a member of the association, and enable it to be of service to the profession. (Cheers.)

The Chairman responded, observing that the association had now been in existence for ten years, and was as strong as ever it was. It had had its hours of adversity as well as prosperity, but it was now going on pretty smoothly, and he hoped it would do so for years to come, and that they would continue to pull well together, in which case they would be second to none in the kingdom. (Hear, hear.)

Mr. W. C. Lawson proposed "The other Veterinary Medical Associations," coupled with which was the name of Mr. Freeman, representing the Yorkshire Association. The next toast on the list was "The National Veterinary Benevolent and Mutual Defence Association," proposed by Mr. Greaves, who said that the society was intended to benefit the widows and orphans left unprovided for by members of their association. Up to the present time, he was glad to say, they had not been called upon more than once or twice to render assistance of this kind, and now they had something between £800 and £900 in hand; besides which they had a mutual defence fund of between £200 and £300, for the existence of which they were greatly indebted to the efforts of the chairman of the meeting. (Applause.) The toast was responded to by Mr. Welsby; after which the remaining toast on the list, "The Ladies," was given by Mr. A. Lawson, and acknowledged by Mr. Hopkins. The company then separated.

C. W. Elam, *Hon. Sec.*

[In consequence of a woodcut having to be prepared for its illustration, Professor Walley's very valuable and interesting paper cannot appear until our next number.]

ROYAL COLLEGE OF VETERINARY SURGEONS' EXAMINATIONS.

At the meetings of the Scottish section of the Court of Examiners of the Royal College of Veterinary Surgeons, held in Edinburgh and Glasgow on July 20th, 21st, and 22nd, the following students of the Veterinary Colleges in Scotland passed their "First Examination":—

New Veterinary College, Edinburgh.

July 20th.

Mr. Daniel Webster
" George Watson
" James McBryde
" Henry Irany
Mr. James Sandeman
" James Bell
" Owen Coll
" Walter Johnstone.

Edinburgh Veterinary College.

July 21st.

Mr. William Lowe
" John Edward Grey
" John McFadycan
Mr. John McMunich
" George Watson
" Robert Rain
Mr. William Hunter.

GLASGOW VETERINARY COLLEGE.

July 22nd.

Mr. Alexander Chivas
" William H. Mills
" William Hendri
" MacNeil Marquis
" James Wilson
" John Hadden
Mr. Duncan McFarlane
" John Buntain
" George G. Hill
" James Crozier
" John C. Atkinson
" William Shaw.

NEW VETERINARY COLLEGE, EDINBURGH.

SUMMER SESSION, 1875.

PRIZE LIST.

Medals given by the Highland and Agricultural Society of Scotland.

Anatomy, Mr. Henry Snarry, Malton, Yorkshire.
" Certificate of Merit, Mr. George Watson, Manchester.
Chemistry, Mr. James Sandeman, Kirriemuir.
" Certificate of Merit, Mr. Walter Johnston, Sligo, Ireland.
Materia Medica, Mr. Henry Snarry.
" Certificate of Merit, Mr. J. M. Bryde, Mochrum, Wigtonshire.

Medal given by Professor Vaughan.

Zoology and Comparative Anatomy, Mr. James Bell, Leys Mill, Arbroath.
" Certificate of Merit, Mr. Daniell Webster, Carnarvon.

Medal given by Professor Williams.

Best Matriculation Examination, Mr. George Marshall, Glanton, Alnwick.

ARMY VETERINARY DEPARTMENT.

GAZETTE, JUNE 22nd.

To be Veterinary Surgeons on Probation:

Murray Anderson.
John Henry Steel.
James Mills.
Thomas Flintoff.

GAZETTE, JULY 20th.

Veterinary Surgeons on Probation to be Veterinary Surgeons:

J. Hume . . . . August 12th, 1874.
R. D. Graham . . . October 10th, 1874.

Staff Veterinary Surgeon W. Partridge retired on temporary half-pay.

Notes and News.

POISONOUS MILK.—An alarm has recently been created in Rome, owing to a number of persons being suddenly seized with unaccountable illness; and the suspicion of poisoners being concerned in the production of the symptoms made the panic still greater. However, a little calm inquiry on the part of the doctors resulted in the discovery that only persons who had drunk goats' milk—the usual morning draught for children and elderly persons in Rome during the summer—were affected. Further investigation, it appears, resulted in the discovery of a certain *capraro*, or goat-herd, who had anointed the udders of his flock with Belladonna. The man was arrested, and on examination it was elicited that fourteen goats, wanting better forage, had eaten quantities of Euphorbia, Black Solanum, Ranunculi, etc., growing along a lane outside Porto Cavalleggeri—plants which, we are told, do the goats no harm, but poison their milk for human beings. The goats were in perfect health; but those persons who had partaken of the milk suffered in proportion to the quantity of that fluid they had imbibed. The symptoms were those of a gastro-intestinal irritation, indicated by vomiting, pains of the epigastrium and bowels, diarrhœa, thirst, shortness of breath, pallor, small and frequent pulse, and diminution of temperature. In some cases recovery took place within twenty-four hours; in others it required four and five days. Professor Ratti examined the pasture where the goats had fed, and discovered among the herbage *Conium maculatum*, *Clematis vitalbula*, *Colchicum autumnale*, and *Plumbago Europea*. All these poisonous plants bore marks of having been browsed upon. An examination of the vomited matters and the milk resulted in the discovery of a yellow solid matter which appeared to be *Colchicina*, and it was inferred that the *Colchicum autumnale* must have passed in the form of its alkaloid from the plant to the milk, thus accounting for the symptoms induced in those who had partaken of it.

THE IMPORTATION OF FOREIGN CATTLE.—On August 7th, a large and influential deputation, composed of foreign importers and dealers in cattle, waited upon the Duke of Richmond, at the Privy Council Office, Whitehall, on the subject of the removal of existing regulations affecting Foot-and-mouth disease in cattle imported from abroad. The Right Hon. Russell Gurney, M.P., and Mr. Phillip Twells, M.P., accompanied the deputation, the former introducing them. Mr. Irvine (Chairman of the Associated Foreign Importers) submitted that Foot-and-mouth disease restrictions should be expunged from the existing regulations affecting the importation of foreign animals. Among other reasons, because Foot-and-mouth disease was prevalent amongst cattle bred in the United Kingdom some years before foreign animals were allowed to be imported. That restrictions on importation, although rigorously enforced for many years, had proved to be useless, and had considerably increased the price of meat. That it was generally believed to be an epidemic, a passing evil, and beyond control. That reference to the most eminent veterinary authorities would find them almost unanimously of opinion that the existing regulations should be withdrawn. That at present foreign animals were subjected, at the place of landing, to regulations which were not applied to home-bred animals exposed for sale in any market of the United Kingdom. In the latter case the animals suffering from disease only were required to be slaughtered, while the remainder were allowed to go all over the country; whereas, in the case of foreign animals, if one animal of any class was even slightly affected, the whole of the cargo was ordered to be slaughtered, by which enormous loss was sustained by the importer, and such

difference in practice was very detrimental as well as unfair to the foreign trade. He further submitted that there should be liberty of appeal from the decision of the veterinary inspector when he pronounced animals to be suffering from disease, such appeal to be to a member of the Royal College of Veterinary Surgeons, who, with the inspector at the place of landing, should call in an umpire. He further urged that, for the better dispatch of business, a veterinary inspector should be appointed to Brown's wharf, and so save the great loss of time incurred in sending for the present inspector, who was also inspector for the Deptford Market. He pointed out that large numbers of foreign cattle had been prevented coming into the United Kingdom in consequence of the harassments imposed upon foreign stock, and contended that they were as free, if not freer, from disease than animals bred in the United Kingdom. He complained that foreign cattle were burdened with restrictions in the most unfair manner, and pointed out as one of the anomalies of the system, that though one foreign animal was found diseased in a cargo at the port of landing, the whole of the living freight was stopped at Deptford, and there slaughtered; whereas, when they were passed as sound, and allowed to go into the market, they were placed on the same footing as English and all other breeds; and if any were found infected, they were sent for immediate slaughter, whilst the others were allowed to be driven away to different parts of the kingdom, as if nothing had happened. Mr. Richard Hall and other gentlemen having spoken, the Duke of Richmond said he had attentively listened to their remarks on the subject, which was one of no mean importance, and he would take care to lay their views before his colleagues. The deputation then withdrew.

CONTAGIOUS DISEASES IN ANIMALS.—It is important to farmers, cattle-dealers, and others to know the purport of the recent Order in Council with respect to the contagious diseases of animals. The Order provides that every person having in his possession, or under his charge, an animal (including horses) affected with a contagious or an infectious disease, is to observe the following rules:—He is, as far as practicable, to keep that animal separate from animals not so affected. He is, with all practicable speed, to give notice of the fact of the animal being so affected to a constable. The constable is forthwith to give notice thereof to the inspector of the local authority. The inspector is forthwith to report the same to the local authority, and (except in the case of Foot-and-mouth disease) to the Privy Council. No animal suffering with Foot-and-mouth disease, or that has been in contact with an animal so affected, is to be removed from the place where the disease exists until ten days after the disease shall have ceased to exist. The same regulation is enforced with reference to sheep affected with the Scab until after the expiration of twenty-one days from the time when the disease ceased. Horses affected with Glanders or Farcy are not to be moved, except under the orders of the inspector of the district. There are certain exceptions in regard to cattle and sheep, and special duties are imposed upon buyers of cattle at fairs, and upon constables and inspectors. Any person acting in contravention of these orders is liable to a penalty of £20.

DISEASE AMONG PIGS.—A telegram from Carrick-on-Suir, Ireland, states that an epizoöty of a virulent character has broken out among the pigs of the light porker class. It is of a type wholly unknown, and does not affect heavy bacon pigs.

HORSES EXPORTED.—In the last seven months the value of horses exported from this country was £130,922, against £110,071 in the preceding year. The value of those exported to France was £76,296, against £73,540 in the previous year.

A DOG TAX.—From a return to the House of Commons just issued, it appeared that in the last ten years as many as 44,025 sheep were killed by dogs in Ireland. The largest number was last year, when 7,442 were killed. In 3,235 cases the owners of the dogs were discovered and made amenable. The return extends to thirteen pages, and embraces a period from 1865 to 1874. The total number of dogs in Ireland, for which duty was paid for last year, was 310,782. There are more than 21,000 dogs in the County Cork alone. By far the greater number of sheep-worrying cases occur in County Donegal, where there are 16,314 dogs registered; but in smaller places much mischief is done, as in Youghal, for instance, where there are only 127 dogs, and yet last year there were fifteen cases of worrying. The dog-tax in Ireland is only two shillings per annum—far too small a sum to keep down the race of curs and useless dogs which haunt the villages and cause annoyance and destruction. The total sum derived from this tax is £31,078 4s., but thirty-seven per cent. of this is absorbed by the faulty system of collection.

INOCULATION FATALITY.—A fatal accident occurred at the beginning of August to the Marquis de Pons. He cut one of his fingers slightly whilst operating on the dead body of a horse. In the night the finger swelled, got worse, and three days after the accident the marquis was dead.

DOGS IN KENTUCKY.—In a single small county in Kentucky, it is estimated that there are no fewer than 4,300 dogs.

FRENCH PURCHASES OF ENGLISH HORSES.—The French Minister of Agriculture and Commerce has just granted a credit of 185,000 francs to Baron du Taya, Director of the Studs, for the purchase of stallions and mares in England.

INFLUENCE OF FOOD UPON MILK.—A farmer at Kirby Lonsdale has been making experiments as to the milk and butter produced by various kinds of food, and finds that cotton-cake is better and cheaper than linseed-cake. In the first trial a cow was fed with twelve to thirteen stone of ryegrass, with three pounds of Driffield cotton-cake twice a-day; with this food, which cost 4s. 6d. per week, she produced 168 quarts of milk, which yielded 13 lb. 14 oz. of butter. She was then fed with the same amount of ryegrass, and four pounds of linseed-cake twice a-day, the cost of which was 6s. 6d. per week. On this diet she produced 170 quarts of milk, which yielded 13 lb. 11 oz. of butter. A third experiment of feeding the cow on oatmeal, in addition to the grass, failed, the yield of milk being immediately considerably lessened.

INTERESTING HYBRIDS.—At the Acclimatization Gardens in Paris, there are at present the following remarkable and interesting soliped hybrids—a collection never before exhibited:—1. Cross between the *Horse* and *Ass*—the common Mule; 2. Cross between the *Horse* (stallion) and *Mule* (mare); 3. Cross between the *Horse* and Burchell's *Zebra;* 4. Cross between the *Horse* and *Hemoine* or *Onager;* 5. Cross between the *Ass* (stallion) and common *Mule* (mare); 6. Cross between the *Ass* (stallion) and Burchell's *Zebra* (mare); 7. Cross between the *Ass* (stallion) and *Hemoine* (mare); 8. A *pure-bred* Burchell's Zebra. The writer in *Land and Water* who gives this information, remarks that it will be interesting to ascertain the progeny of these different hybrids. If the produce of the mule, which, he notes, is extraordinarily rare (though it is by no means uncommon in certain warm countries), breed together, then by breeding the young obtained from it with the horse, and those obtained by the ass, we shall have *pure-bred Mules: i.e.*, animals having in equal parts the horse and the ass blood, and these will perhaps prove regularly prolific,—a circumstance extremely improbable.

IRISH HORSES.—The Registrar-General has issued a return of the number of thoroughbred and other stallions in Ireland, with comparative tables for the years 1864, 1868, 1871, and 1875. It appears that the number of thoroughbreds in 1864 was 88; in 1868, 132; in 1871, 162; and in 1875, 149. Of the half-breds the number was 340, 392, 476, and 542. Of Clydesdales, 128, 86, 132, and 206. Taking all classes together, the numbers were in the first period 1,034, second period 1,059, third period 1,333, and in the present year 1,476.

DRUGGING OF ANIMALS ACT.—We regret to hear that, for some unexplained and not very apparent reason, this bill has been withdrawn.

Obituary.

The following deaths have been registered:—Mr. William Simmonds, Veterinary Inspector, London; his diploma is dated July 22, 1840. Also, in his sixtieth year, Mr. Henry Naylor, of Worksop, Notts, who received his diploma January 26, 1837.

Correspondence, etc.

THE VETERINARY PROFESSION, THE ROYAL VETERINARY COLLEGE, AND THE ROYAL COLLEGE OF VETERINARY SURGEONS.

To the Editor of the VETERINARY JOURNAL.

SIR,—Under the head of Editorial in this month's *Journal*, you state that "It is somewhat difficult to discover what were the objects the original promoters of the Charter of Incorporation had in view when they drew up the instrument which received the Royal sign manual in 1844; but it is certain that, however laudable and well-intentioned their aims may have been, the result has not proved very beneficial or satisfactory in several respects. Perhaps it may have been looked upon as a great achievement at that period to have obtained the recognition by the State of the veterinary profession, and to have had the powers and privileges of a corporate body conferred upon it; and that one of these powers was the sole right to examine the students taught at the two schools then in existence—one in London and the other in Edinburgh—and to confer upon them the distinctive designation, if found worthy, of Member of the Royal College of Veterinary Surgeons."

For your information, and in order that no future misunderstanding may exist with regard to the wishes and objects of the original promoters of the Charter of Incorporation, I enclose the original draft memorial to the Governors of the Royal Veterinary College, which was by desire submitted to the late Mr. Yowatt for correction, and which, with his letter, I wish you to publish *in extenso*, with the alterations made by Professors Spooner and Morton. A draft of the memorial, as afterwards presented, you will find in the pages of the *Veterinarian* for 1840.

The following extract communicated to me by Mr. Thomas France, solicitor, Bedford Row, dated 16th July, 1840, also contains the desires of the veterinary profession, as well as the opinions of the Governors of the Royal Veterinary College:—

Mr. Thos. Turner, Mr. King, Mr. Thos. Mayer, jun., and several others, members of the veterinary profession, attended and presented a memorial on behalf of themselves and others, signed by 315 of that body, which was read, and the heads of which were: Requesting the Governors to procure a Charter and an Act of Parliament to prevent the veterinary profession from serving on juries and in parochial offices; to prevent illiterate men who had not obtained a diploma from practising or writing up that they had been educated at the College, by which means discredit is brought on the profession; to increase the fees paid by pupils to thirty guineas or more; and certain regulations to be adopted respecting students who had been apprenticed to members. After fully hearing the deputation and various letters read, the deputation was informed that the Governors have had the subject of the memorial under their very serious consideration, and would most readily concur with the wishes of the deputation in taking the earliest opportunity of submitting such measures as may seem most advisable to the proper authorities, but that they (the Governors) saw no reason to alter their opinion, which they had formed upon very mature consideration on the subject of the recommendation as to the increase of the lecturers, and the fees paid by the pupils.

I have, fortunately, preserved the letters received from the 315 members of the veterinary profession alluded to in this extract, and I have stated in my paper on 'The Charter and its Objects' (a copy enclosed), that 'its promoters and supporters considered it as a means of uniting themselves for the purposes before mentioned, as well as in the end providing for the future welfare of the profession.' Thirty years have elapsed since its obtainment, and during that time the Council have been engaged in defending its foundations, in regularly making bye-laws, and then substituting others; and before they petition the Government for even a supplementary charter, I suggest that they get their solicitor to examine the Charter of the Farriers' Company, and carefully consider such proposals that will not only meet the wishes of the profession, but obtain the support of Her Majesty's Government.

Believe me, your obedient servant,

THOMAS WALTON MAYER, M.R.C.V.S.

H.P. Royal Engineers.

"*To the Governors of the Royal Veterinary College.*

"This memorial of the undersigned members of the veterinary profession humbly showeth,—That your memorialists, actuated by a desire to promote the welfare of veterinary science, and fully convinced that any suggestions they may bring forward having for their object the accomplishment of so noble a purpose will meet with your careful consideration, they have thought it their duty most respectfully to address to you a few words on the present state of the profession to which they are devoted.

"In the first place, they cannot but congratulate you that after many years' attention to the interests of veterinary science, you are at length beginning to see it occupy that station to which, in every point of view, it is entitled to aspire, and its members for the most part assuming that position in society which is their legitimate aim and due.

"The events which have recently taken place in the education of the veterinary student will, in your memorialists' opinion, still further tend to render the pupil more competent either to practise the veterinary art, etc. fulfil to a greater extent the intentions of the founders of the Veterinary College, and render the veterinary surgeon of still greater importance in the estimation of the public.

"While, however, your memorialists are happy in giving utterance to these

feelings of gratitude, they cannot conceal the regret with which they have regarded several recent resolutions of your Council.

"Having been students in the Royal Veterinary College, and many of them for several years engaged in country practice, they have seen, with deep interest, the important advances which their sister science (medicine) has made in the education of its pupils, and they have felt within themselves a natural and pardonable kind of emulation; and they trust that you will forgive them if they candidly state to you their opinions on one or two points connected with the present education of the veterinary student.

"In all the medical schools in the metropolis, many of you are doubtless aware that due care is taken, in the first place, to secure efficient lecturers on the different subjects that form the student's study; and, in the next place, to see that these lecturers are properly remunerated for their time and attention, and the great responsibility which they incur. Your memorialists have great satisfaction in observing that the Veterinary College has not been backward in providing for the first of these objects, and efficient lecturers are employed, with credit to themselves and with benefit to the pupil, in elucidating the anatomy and physiology of the horse, cattle, sheep, and in the pathology and surgical treatment of the horse, and also materia medica, pharmacy, and chemistry. With regard to the other subjects which the founders of the Veterinary College thought fit to select as essential to the education of the student, and first and most important among them, the medical treatment of the diseases of cattle, sheep, pigs, etc., your memorialists regret that efficient measures have not been adopted, and they beg leave to suggest the propriety of the appointment of some able teacher, who has lived and practised among cattle, as by him only can the distinguished characters of the diseases, and the proper mode of treatment, be advantageously taught.

"On the second point, before alluded to, viz., the remuneration of your lecturers, you will excuse your memorialists when they state to you that they do not consider them sufficiently remunerated, nor do they think that the present low rate of fees is at all likely to promote the respectability of the students or the profession.

"Anxious as they are to place within the reach of every student the means of rendering himself thoroughly educated for his profession, the public expect, and the profession require, that means should be adopted which shall prevent those from deluding the public and bringing discredit on the profession, who never intend to offer themselves for examination, but who pay the present low fees, stay a few months at College, and then appear before the public as members of the Royal Veterinary College.

"By increasing the present fee to thirty guineas, *or more*, according to the number of lecturers, your memorialists are of opinion that your professors would be better remunerated, that it would form one check to the admission of illiterate students; they would further remind you that in no one of the public schools of medicine to which an hospital is attached, are the scale of fees one-fourth part so low as at the Veterinary College.

"Your memorialists also earnestly entreat that you will take into your serious consideration the fact that no distinction with regard to the period of residence at the Veterinary College at present exists between the educated and the uneducated student. There are many rising men now at the College who have had the opportunity, under the guidance of their parents or of some master to whom they were apprenticed, who had been educated for the profession from their very childhood, and have had ample opportunities of seeing and treating the various forms of disease; but on entering within the College walls to complete that which they already know in part, themselves placed on a perfect equality down to the very period of their stay with those who have

never served their apprenticeship, and are totally ignorant of veterinary practice.

"Your memorialists have no doubt but that you will at once see the equity of making some alteration in this most important matter, relying, as they do, in perfect confidence on your endeavours to devise a plan which, while it renders justice to the profession, will place a further barrier to the admission of uneducated men. If your memorialists may be allowed to give an opinion upon this most important point, they would suggest that all students should be required to present indentures at their examination of their having spent three years with some regular practitioner, and also to have attended two full sessional courses of lectures at the Veterinary College. In default of the numerous advantages of apprenticeship, they should be compelled to attend three years at the Veterinary College. There should be stated, in bold and unequivocal terms, the folly and injustice of allowing *medical examiners of veterinary students.*

"Before your memorialists conclude what, they are afraid, has well nigh wearied your attention, they feel it due to their Scottish brethren to state that they think you have rather (though unintentionally) done them an injustice, in requiring them, after they have graduated at their own school, the same period of time at the London School, as if they had never studied at all, and then to undergo another ordeal in order to obtain their diploma. The ordeal of the examination perhaps should not be dispensed with, but surely a much shorter period of time might suffice.

"In conclusion, your memorialists pray that you will pardon their freedom in thus making known to you what their duty to their position and themselves imperiously demands, and to assure you that they will at all times be ready to advocate every measure which has for its object the welfare and progress of our noble science; and they further pray that you and they may see it continuing to progress until it may be enabled to claim, if not an equality with human medicine and surgery, yet some alliance between them, and its members everywhere performing their moral and social duties with honour to themselves and credit to the institution at which they were educated."

VETERINARY EDUCATION.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—I must beg to congratulate you on the manner in which the "Veterinary Journal" has made its *début*, and to wish all success to an undertaking which has for its motive the welfare of the profession. If the first numbers are to be taken as specimens of the style and scope of the journal, the profession may feel confident that there is at last a free and independent medium of intercommunication,—free from all pseudo-conservatism,—independent of the uninteresting petty jealousies of rival schools.

A letter appeared in your first number, which the author has modestly termed "random jottings;" but I hardly think that any *random* volley could be expected to hit the mark so very generally as the various items of that letter have done, and little exception can be taken to anything therein contained. I have neither time nor inclination to execute a superfluous fantasia on so able and comprehensive a tema, but I wish to offer a few remarks on subjects partly suggested by that letter—subjects all bearing on a matter not nearly so pregnant with interest to the profession in general as it should be —its educational status.

The first question that arises is, Why is the profession at such a stand-still? We are often told that it is a *conservative* profession. The unfortunate, but

time-honoured word, "conservatism," is often regarded, and sometimes justly, as a kind of cloak for error, doing duty as a justifier of inertness, incompetence, furtherance of self-interest, etc.

If the profession has been and is conservative, of what is it conservative? Conservatism may be marked by maintenance of *routine* and harmless forms, or apparent in that zeal which is a stimulus to keep pace with the advance of collateral knowledge—conservatism of reputation; or it may be indicated by a state of comparatively pristine ignorance.

Much has been said on the subject of raising or improving the status of the profession. Judging from recent opinions and recent facts, it would seem advisable first of all to *make* it a profession, and then try to raise its status; for notwithstanding the terms of the Charter, it seems hardly rational to think that an occupation so unprotected, coupled with a degree which, it would appear, any body may assume, can constitute a profession, in the usual sense of the word. But profession, trade, or what you will, its members who have gone through a regular, even if imperfect, training are certainly entitled to some little protection, for which they look in vain to the Charter of the Body Corporate. As the subject of my letter does not bear upon the question of the Charter, I shall not digress further.

Let us suppose that the Charter of the Royal College of Veterinary Surgeons is everything that could be desired, and that the interests of the profession are properly protected. If we have elasticity of fancy sufficient for this, let us take the extreme, but still very frequently occurring, case of a recently passed man, who has had, previous to his college course, little or no connection with veterinary matters. Let us see what he has done, and what he may do. He has passed a remarkably easy matriculation examination, and after a course of some nine months, a purely *vivâ-voce* test on anatomy, histology, chemistry, botany, and materia medica. Then there is an interval, which, if he be wise, and can afford it, he will devote chiefly to repose; for after this test, the first professional examination, unless he be a man of exceptional nature, and able to digest knowledge while he is ravenously devouring more, his mental condition will resemble that of the typical middy's sea-chest—everything uppermost, and nothing at hand. He may, on the other hand, pass the interval in trying to acquire practical knowledge, at the risk of injuring or destroying the slight foundation he has so hurriedly put together; and then he returns to college for another six months or so, to learn to apply, scientifically and practically, the facts that he has possibly forgotten. These slight obstacles he has overcome by dint of severe labour, or else by quickness of discernment, backed up by good education and fair professional knowledge. And let us remember that the final examination is also a *vivâ-voce* one, with the exception of the purely practical work, and that delineation of equine personalities known as "writing a certificate." Our man has passed the test, and let him have all credit for so doing: everybody could not pass it. He begins to find out that he has still to learn his profession; for such a man cannot, as a rule, have very much confidence in himself, after such a whirlwind of lectures, demonstrations, and what not, as his college course has necessarily involved. His diploma has given him a profession, but has he received a sound, efficient education, with a due amount of practical knowledge? Still he may have confidence enough to try to make a practice, or money enough to buy one ready-made; or he may be compelled to take at random an assistant's post. In either case, it will not be unnatural to say, "Heaven, help him!"

Be the shortcomings of our professional course of study what they may, no reflection can possibly be cast upon the examiners, for I do not think that any board does its duty more conscientiously or more ably than either of those appointed by the Royal College of Veterinary Surgeons. But I wish to show

that they are bound down, so to speak, almost as much as the students they examine.

Speaking both as a student and tutor of some varied experience, I believe that a purely *vivâ-voce* examination in a scientific subject is an injustice to many of the men who present themselves. Such a test, *by itself*, is not sufficiently searching for some candidates, and, on the other hand, too "touch and go" for others; besides, there is nothing whatever to affect the nerves of an examiner, but everything that is calculated to upset those of a student. I have seen, in time past, many well-read men make an indifferent show at a *vivâ-voce* examination, while they carried all before them at the paper on the same subject: the converse of this is equally probable. In my opinion, we require examinations consisting of both paper-work and *vivâ-voce* —for I would not by any means dispense with the latter, but only place it second to the other; and the result would be that, supposing a number of candidates were equally well prepared, the exact man would succeed better with the paper, the ready man with the *vivâ-voce*, while exceptional talent would probably shine at both tests.

I feel that I am writing in the interests of students, and we ought to remember that it is to them chiefly that the profession has to look for that "phantasm of time," the raising of *status*.

Not long ago, I casually mentioned to a friend the advisability of introducing paper-work into our examinations. He approved of the idea, but recommended that we should first ascertain whether our students were "able to write." This involves another requirement: he did not mean to write, in the simple sense of the word, but to compose a succinct and satisfactory answer to an examination question. Do our matriculation examinations *demand* this of a student on his entry? I fear not, and the reason is that there is a certain amount of *un*healthy rivalry, perhaps inseparable from the system, which prevents the rejection of any student, unless his ignorance be something astounding. Whatever changes are made, so long as this weak point remains, it is hardly possible that progress can be anything but slow and unsatisfactory. Before a student enters a college, he should, at the least, be required to prove that he is able to study, that he has sufficient elementary education to enable him to grasp the peculiarities of scientific phraseology, and to express himself creditably in black and white. It should be part of the prerogative of the Council of the Royal College of Veterinary Surgeons to impose a common standard of matriculation for all colleges, and to appoint suitable persons to conduct the examinations. There is a weakness for speaking of the *university* of the profession. It is something rather novel for a profession to have a university solely for itself; but calling it a university for the sake of argument, can another be found which places its matriculation under the control of others, and allows their convenience to be the only guide? A candidate who passed such a preliminary test as I propose, would then be at liberty to select his college. It is beyond the question to speak here of the subjects and limits of such an examination, as details of that kind are easily settled.

I know that there is great opposition to any change in this direction. The cry is, that "Colleges will have no students at all—they cannot encounter such tests—the course becomes more and more difficult," etc., etc. Now with respect to the supply of students, if intending candidates know that a certain preliminary test must be passed, pass it they will, if they are men worth having as students; and if not, they are not a serious loss. As to the difficulty, any man of education will perceive that the object of such a preliminary test is to make the professional course easier, and not more difficult; while at the same time it would tend to weaken that feeling of contempt for general knowledge, which is unfortunately too rife in the profession.

If the Council of the Royal College of Veterinary Surgeons attach any importance to the social value of their diploma, the question of primary education is to them one of paramount importance—an importance augmented by all the past years of neglect,—years which have permitted other professions to sweep so immeasurably in advance. How often do we see an under-educated student confused or puzzled by the jargon known as the "language of science," and in the end he is often obliged perforce to commit a string of *macaronic* phraseology blindly and mechanically to memory. A fair ordinary education would enable that man to grasp at once the sense, or non-sense, of the difficulties; and often the absurdity of the same, like the doggrel verses of schools, would materially aid his memory. It is in many cases a species of cruelty to animals to permit such a man to encounter a course of professional study; he often expends his money, time, and patience for nothing, simply because the existing state of things allows him to try to run before he can walk; while it mercilessly places difficulties, not to say impossibilities, in his way. Would the removal of obstacles like these tend to increase or to lessen the student's difficulties?

Allowing the two above-mentioned alterations to be necessary, there is still a very weak point, and it is this: The amount of knowledge required is out of all proportion to the length of the curriculum. The medical student is not considered eligible for his first professional examination until he has studied for two years; the veterinary student is expected to attain a similar amount of knowledge in nine months, or let us say one academic year. A still wider comparison might be made with respect to the final examination: the candidate is supposed then to be conversant with the various branches of medicine and surgery, with physiology, morbid anatomy, and the practical work incidental to the profession, and he is expected to acquire the major portion of these during his last winter session at college. We cannot reasonably complain of the requirements of the examinations, for they only demand a necessary amount of knowledge; but whether we divide the time of the course into periods proportionate to the respective importance of each subject, or place the whole time and the syllabus side by side, the result is equally ridiculous. Even were the preliminary examination a searching scholarly test, the period between it and the first professional would be very much too short; far more, then, is its insufficiency manifest when we think that to many new students scientific nomenclature is almost as incomprehensible as the language of the Vedas. I know that many men, whose decision on such a point is of the greatest value, share the opinion that an extension of the period of study is essential to the attainment of a proper standard of knowledge. Opinions will differ as to the amount of time required, and also as to the division of subjects, but the statement of the leading fact is of the first importance. A very short time at college will show a student that he has an unreasonably brief period in which to acquire a reasonable quantity of knowledge, and we cannot wonder that some adopt unadvisable means to that end. Some give up legitimate study, and trust to that most hollow deception, *cramming;* others expend time and cash in trying vainly to find a *royal road;* and those who diligently work, as a rule succeed, it is true, but often convey to their examiners the impression that they would have been really proficient, had they studied and digested their knowledge for another session. I hope that, ere long, students will have a period of time for their studies calculated to insure success to every deserving one, and to give each a lasting foundation, on which he can, in after life, build whenever he will, and not an evanescent structure which the exultation of success is too apt to sweep away.

In my opinion, then, as stated above, the most prominent requirements of veterinary education are—1. The introduction of paper-work into all exami-

nations. 2. A higher preliminary examination imposed by the Council, and conducted under their auspices. 3. An extension of the course.

I do not pretend that these reforms would rectify all grievances; but that they constitute the foundation of educational progress, as applied to present circumstances, I have no doubt whatever. The question of honours and a higher degree does not seem to be of such immediate importance as that of regulating and improving the value of the ordinary pass. The latter once placed on a scholarly, scientific, and practical footing, then doubtless honours and higher degrees would be of great value.

In this brief letter I have expanded slightly some ideas expressed by Mr. Gerrard in the July number. I quite agree with him, that, *if* paper-work be introduced into our examinations, the questions should be published; not because universities do so, but because it would be of great use to students, lecturers, and the profession generally. I do not, however, quite agree with him in one point—that colleges should furnish examination questions. I fail to see the necessity for such an arrangement, and I doubt whether examiners of standing would submit to it. However, this is one of the minor details, which would no doubt be duly considered, if necessary.

In conclusion, Mr. Editor, I must say that I have no claim to originality. I merely suggest that the Council shall adopt a method of examination which has been pre-eminently successful in other professions; and that it shall allot a suitable period of time for study.

Let it be remembered that *status* is intimately blended with social position, and social position with education; and while it is not desirable that a course of education should render a professional man pedantic, it certainly should carry him somewhat beyond the every-day requirements of his profession: enabling him, to use a common phrase, "to hold his own" with ordinary scientific men on ordinary scientific subjects. Surely it is not too much to hope that the veterinary profession has existed long enough to realize the fact that *knowledge is power*.

I am, sir, yours faithfully,
J. VAUGHAN.

New Veterinary College,
Edinburgh, Aug. 1875.

THE NATIONAL VETERINARY BENEVOLENT SOCIETY.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—Can you spare me a little space to advocate the claims of the National Veterinary Benevolent Society? an institution which, although in existence now some years, can only show the annexed insignificant balance sheet. From the item, "Members' Subscriptions to March 1st, 1875, £37 8s.," it would appear that the subscribers to its funds number, all told, about thirty-five. Now, inasmuch as the Royal College of Veterinary Surgeons shows that there are upwards of 2000 members in practice, it appears to me strange that the institution or funds to which I wish, with your help, to draw attention, should have received so little support. A poor profession like ours, above all others, should have directed its attention, one would have thought, towards some provision for its unsuccessful members. The precarious existence, the miserable pay, the risks incurred from exposure to the weather and accidents, by many, if not all, veterinary surgeons, must render it extremely desirable that in time of trouble or adversity he or they should have some refuge to look to for shelter, help, and support. Trusting that you may see fit to take this matter up with your usual energy,

Believe me,
Very faithfully yours,
WILLIAM FIELD, JUN.

224, *Oxford Street, London.*

The Treasurer's Financial Statement, 1875.

CASH RECEIVED.

	£	s.	d.
Balance of Account, 8th August, 1871	328	18	6
Members' Subscriptions to March 1st, 1875	37	8	0
Thomas Graves, donation, being a sum presented to him from North of Scotland V.M.A.	5	0	0
Col. Sir Frederick Wellington Fitzwygram, donation	21	0	0
Seven half-years' Bank Interest to 24th December, 1874	34	16	2
	£427	2	8

CASH PAID.

	£	s.	d.
April 17th, 1874, Donation to the late Mrs. George Brown	5	0	0
Stamps, Circulars, Stationery, for 3½ years, ending March 1st, 1875	2	14	6
Cash in Bank	419	8	2
	£427	2	8
Amount owing at this date, 1st March, 1875	£102	14	6

Audited and found correct,

T. HOPKIN.

ANSWERS TO CORRESPONDENTS.

ENQUIRER.—"Stringhalt" in any stage constitutes unsoundness.

CORRIGENDA.

In Mr. Hill's paper, p. 98, line 12, *delete* "of the carriage;" and in line 19, for "the weather being too cold and dry to wash her," *read* "she being dry and too cold to wash."

Communications, Letters, Books, etc., Received.

COMMUNICATIONS have been received from W. Hunting, London; Staff Veterinary Surgeon J. Collins, Dublin; D. Maclean, Glasgow; T. W. Mayer, Aldershot; T. Paton, Army Service Corps, Dublin; W. A. Cox, Ashbourne; Professor Vaughan, Edinburgh; J. C. Hingston, Leeds; W. B. Walters, Inniskilling Dragoons, Dundalk; Professor Williams, Edinburgh; "Five Points;" G. Morgan, Liverpool; W. E. Litt, Shrewsbury; W. Elam, Liverpool; F. B., Spalding; W. Reid, Johnstone.

BOOKS, ETC.: *P. Mégnin*, De la Gale du Cheval étudiée dans ses trois variétés, etc.; *A. Lydtin*, Die Bekämpfung der ansteckenden Thierkrankheiten durch ein Reichgesetz; *M. E. Semmer*, Ueber die Pathologische Anatomie der Rinderpest; Cours Abrégé d'Hippologie; *Foster*, Pocket Temperature Charts.

The *Hampshire Chronicle;* the *Glasgow Herald;* the *Australasian;* the *Journal of the National Agricultural Society of Victoria* (Australia).

All Communications, Books for Review, Advertisements, etc., must be addressed to the Publishers, 20, King William Street, Strand, W.C.

Morbid Specimens are to be forwarded addressed to the Editor, "Veterinary Journal," Brown Institution, Wandsworth Road, London.

Communications must be accompanied by the name of the writer, whether he may desire to have it published or not. Anonymous letters and articles cannot be inserted. The Editor does not hold himself identified with the views or opinions expressed by Contributors. Communications for insertion in the next number must arrive on or before the 15th of the present month.

TO VETERINARY SURGEONS AND OTHERS.—Wanted a Gentleman with about £2,000 at his command (as partner or not), to extend a London practice (West End), and take a small Farm the advertiser has in view, where a country practice could be established in connection. V.S., care of Mr. ADLARD, 22½, Bartholomew Close, London.

CONTENTS.

Page

ORIGINAL ARTICLES :—

The Differentiation in the Characters and Symptoms of Gastro-intestinal Affections. By Professor THOMAS WALLEY 233
Artificial Eyes for Horses. By W. FIELD, junr., M.R.C.V.S., London . 245
Foot-and-Mouth Disease. By JAMES LAMBERT, M.R.C.V.S., 17th Lancers 248
A Supposed Case of Hysteria. By A. INGLIS MACCALLUM, V.S., Edinburgh 250
Spasmodic "Roaring." By J. C. BROAD, M.R.C.V.S., London . . 256
Cases of Poisoning in Pigs and Geese, Simulating the so-called Typhoid Fever in Pigs. By LANCELOT T. BARKER, M.R.C.V.S., Skelton-in-Cleveland 258
Veterinary Obstetricy. By William A. COX, M.R.C.V.S., Ashbourne . . 260
Easy Removal of Overgrown Teeth. By J. C. HINGSTON, Veterinary Student, Leeds 268
A Fatal Eruptive Fever in Pigs 269

EDITORIAL :—

The College Education of the Veterinary Student 273
The Arctic Expedition and the Sledge Dogs of Greenland 277
A Text-Book on Veterinary Physiology 278
Continued Extension of Foot-and-Mouth Disease 279
Inspection of Foreign Cattle 283
Rumoured Mortality amongst Horses in London 283
Trichinosis in Germany 283
The Proposed Establishment of a Veterinary School in Australia . . . 284
Protective Inoculation for Contagious Pleuro-pneumonia in Australia . . 287
Serious Disease among Horses in Australia 288

REVIEWS :

An Introduction to the Osteology of the Mammalia. By W. H. Flower, F.R.S. 289

ABSTRACT OF THE PROCEEDINGS OF VETERINARY MEDICAL SOCIETIES, ETC. :

Midland Counties Veterinary Medical Association 293
Yorkshire Veterinary Medical Association 295
The Pathological Society of London 295

JURISPRUDENCE :

Exposing a Glandered Horse for Sale 296

NOTES AND NEWS 298

OBITUARY 299

CORRESPONDENCE, ETC. :

Echinococci 300
The Education of the Veterinary Student 300
A Dog Tax 302
Contagious Pleuro-pneumonia in Ireland 302
Important to the Veterinary Profession 303

NOTICES TO CORRESPONDENTS 304

COMMUNICATIONS, LETTERS, BOOKS, ETC., RECEIVED 304

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